

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 54 WALL STREET, NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. V., No. 11.]

SATURDAY, MARCH 17, 1849.

[WHOLE No. 674, VOL. XXII.]

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PUBLISHED AT 54 WALL STREET, NEW YORK.

Saturday, March 17, 1849.

English Railroad Iron.

3000 Tons H pattern Rails in store, and to arrive this Spring—58 and 60 lbs per yard; of an approved pattern, best English make, each bar being stamped with the manufacturers' name, and inspected before shipment at the works in Wales. For sale by
DAVIS, BROOKS & CO.,
68 Broad street.
2m.11

March 18, 1849

We unintentionally omitted crediting the Glasgow Practical Mechanic's Journal with the Life of Stevenson, and the article on the Formation of Coal, copied in our last paper.

Railway Progress.

Continued from page 146.

VIRGINIA.

Since our last issue, in which we spoke of Virginia, and her railway schemes, such events have taken place that we are able, as we are happy to chronicle, in this number, an entire change in the policy of that State. In the earlier proceedings of her present legislature, all railway schemes contemplating aid from the State, were rejected, and we regarded the policy of Virginia as fixed as that of Massachusetts, though in an entirely different direction. An entire change has however taken place, and a system of State policy has been entered upon on a scale of comprehensive liberality, which would do credit to any State in the Union.

The Legislature, which has recently adjourned, has authorised subscriptions on behalf of the

State, to the following roads, viz: to the Alexandria and Gordonsville road \$540,000, being three-fifths of its capital; to the Alexandria and Valley road \$1,250,000, being three-fifths of its capital; to the Blue Ridge road, to aid in tunnelling the mountain, \$400,000. This is an extension of the Louisa road. It has also subscribed \$1,900,000 to aid in the construction of the Virginia and Tennessee railroad, extending from the James river, west of the mountains, to the State of Tennessee. It has also chartered a road from Petersburg to the Richmond and Danville road, and extended aid to this work to the amount of \$150,000. The aid thus guaranteed by the State is believed to secure the construction of all these works at an early day. Virginia has thus committed herself to the work of developing her own resources by the construction of a system of railroads, designed to penetrate the most remote portions of the State, and open a market to those sections that have thus far had no suitable outlet to their productions. Independently of this, the action of the other States by which she was surrounded, rendered it necessary that she should take these steps to retain the trade and business of the State within her own limits. Such is the superiority that railways give to those States that have constructed them, that those who have thus far neglected to do so, are compelled to go into this work to maintain their equality and protect themselves. It is this necessity that has given the great impulse which we now witness in N. Carolina and Virginia—States that have been the most backward in these works. Virginia is doubly justified in aiding her public works, as those projected will not only vastly develop her resources, but offer favorable inducements to the investment of capital. For years to come, Virginia will be one of the most active States in the work of railways, which cannot fail to give a large increase of business to those engaged in the manufacture of iron, engines, road furniture, etc.

Atlantic and St. Lawrence Railroad.

GREAT INCREASE.—\$6316 55c were received on the Atlantic and St. Lawrence Railroad, in the month of February, (24 running days) for passengers and freight. Passengers, \$3401 51. Freight, \$2915 04. The tickets sold at the Portland depot on Saturday, amounted to one hundred and ten dollars. The receipts for the present month, we confidently predict, will exceed \$800. Appearances leave no doubt, that this will be one of the best paying roads in the country.

Western and Atlantic Railroad.

We learn from the Chattanooga Gazette of the 14th, that the recent sliding of earth at the Tunnel had been repaired, and the work was progressing well, the contractors being determined to have the work completed by the 1st Oct.

The freight cars, it is stated, will not run up to the Tunnel as soon as was calculated, owing to a part of the iron being lost. There was a large amount of cotton, wheat, flour, &c. at Chattanooga waiting transportation, enough to keep 200 or 300 wagons busy, and the roads were bad.

New London, Worcester and Palmer Railroad.

The Board of Directors of the New London Railroad, at a meeting held the present week in this city, definitely and finally decided upon the location of their road within the limits of this city. The route is along the banks of the Thames, up to the west end of Wharf bridge, passing under the western abutment of the bridge, and so on to the Falls.—*Norwich Courier.*

Mobile and Ohio Railroad.

The *Mobile Herald and Tribune*, of the 17th inst. says:—"Every thing in regard to our railroad enterprise looks cheering. Sidney Smith, Esq., who managed the affairs satisfactorily the first year, has been unanimously re-elected President, and is now giving vigorous attention to the work. The Engineer and surveying parties are pushing forward the surveys, and it is confidently expected that during the coming spring ground at this end will be broke."

The Journal and Messenger of 7th inst. says there have been forwarded by the Central road, from the warehouses in Macon, 58,260 bales of cotton, and from the Macon and Western road direct 42,618 bales, making a total of 100,890 bales, or a fraction less than 17,000 bales per month.

The Macon Journal says: "Those people who have been so greatly inconvenienced by the difficulty of getting transportation for cotton, on the Central road, will no doubt be somewhat relieved to learn that the board of directors have already contracted for sufficient iron to lay anew one hundred miles of the track. It is intended that the superstructure shall be entirely repaired and this iron laid in ample time for the next crop. We are also informed that the rail selected is adapted to the nature of the freights which are to pass over the road—being nearly twice as heavy as that now in use. It ought not to be for-

gotten that the Central road, or at least the first hundred miles of it, was an experiment, and it was not dreamed, even by the most sanguine of its friends, when the iron was ordered, that the business would require any heavier rail than that purchased; nor did the means of the company at that time seem to justify any greater outlay of funds for that purpose.

Important Invention in Railways and Engines.

We had the pleasure a few days since of examining models of proposed improvements in railways, and in the construction of locomotives and cars. We have always been fond of mechanics, and may, without boasting, pretend to have some knowledge of the principles of that science. Unless this pretence is utterly unfounded, we cannot but think that the improvements to which we allude will stand the test of experiment, and answer the purposes for which they were intended. If so, a new and most important period will have arrived in this age of iron and steam.

First, a railroad may be laid down over the ordinary undulations of the earth, like a turnpike road, and engines and cars be so constructed that they can go over it with safety. To accomplish this object, the invention enables the engineer, by mechanical means, to supply any degree of adhesion which may be required at any instant, and to dispense with it the moment he ceases to need it. And to do this, there are no rack-rails, or cog-wheels, or centre rail, nor is there, by this plan, any much resistance to the progress of the train as would be caused by adding weight to the engine, in order to produce the requisite adhesion.

By this invention, it is made an almost impossible matter for the cars to be thrown from the track. It is therefore invaluable, for it admits of light engines for light freights—a great desideratum, certainly, for our southern railroads, extending through sparsely settled districts, while it does not prohibit the use of the most powerful engines, when they are necessary.

The effective power of an engine now, is limited to the adhesion of its wheels. By the plan proposed the adhesion is supplied by the engineer in any required quantity; and consequently the power of the engine is only limited by its capacity to generate and retain steam. Hence it is difficult to say what grade may not readily be surmounted. And when we remember that steam coaches weighing only two or three tons have conveyed at a good speed from twenty to thirty passengers over the common and rough roads of England, readily ascending and descending the steepest hills, we cannot think otherwise than that this invention will multiply in a great degree our means of intercommunication, and bind together more closely our extended confederacy; while the saving in the expense of construction and in the wear and tear of roads and machinery, will be greatly reduced.

We have not attempted to explain the means by which such desirable results are proposed to be accomplished, as it is proper that those who are interested should choose their own time and mode of making them public.—*Washington Union*.

We see that the above has been copied with marks of approbation, into most of our exchange papers. As all our information in relation to this new invention is derived from the above article, we can of course give no opinion as to its value; but we confess that we have little faith in it. The realising any practical results from such an invention involves serious difficulties which are obvious to every person who has paid any attention to these matters, and which we do not see how they can be obviated unless we can get rid of the law of gravity.

On a road that is perfectly level, all that the engine has to overcome is the resistance of the atmosphere and the friction of the machinery. The moment the track ascends an elevation there is an additional resistance to overcome, that of gravity; so that on a grade of 80 feet to the mile, supposing the weight of the engine and train to be 100 tons, and running at the rate of 20 miles an hour, the

engine would have to exert a power equal to raising 100 tons 80 feet in three minutes, in addition to that necessary to overcome friction and the resistance of the air. It is calculated that an engine will draw more than five times as much on a level as it will on a grade of 80 feet. The overcoming of steep grades, therefore, involves a vast increase of power. In the next place the wear and tear of the machinery from the greater friction incident to this increasing power is enormously increased. In the third place is costs much more to keep the road in order where there are steep grades. In the fourth place accidents are much more likely to occur on steep grades; as long, therefore, as the law of gravity remains, these objections to steep grades will exist; and it is found to be much cheaper in the end to reduce the grades as nearly as possible to a level than to attempt to overcome them by a use of greater power. Allowing, therefore, that an engine could be constructed capable of ascending very steep grades, although it might be useful on some road, it could not come into general use, for reasons of economy and safety alone. We hope soon to see a particular description of this invention, of which we will give our readers due notice.

Baltimore and Ohio Railroad.

Dr. W. S. Woodside has resigned the office of General Superintendent of the Baltimore and Ohio Railroad, and Wm. Parker, Esq., late Superintendent of the Boston and Worcester Road been appointed his successor. The Boston Daily Advertiser speaks of him in the following terms:

William Parker, Esq., Superintendent of the Boston and Worcester Railroad has been appointed to the office of General Superintendent of the Baltimore and Ohio Railroad, and has in consequence tendered his resignation of the situation which he holds in the government of the road first named.—The loss of the services of Mr. Parker, in the responsible situation which he has ably and most satisfactorily filled for a period of ten years, will be much regretted by those who have a share in the management of the Boston and Worcester Road, as well as those who have a pecuniary interest in it, or have frequent occasion to travel upon it. The appointment which he has received, to the charge of so important a work as the Baltimore and Ohio Railroad, accompanied with the offer of a liberal rate of compensation, is a satisfactory proof of the high character which he has established, by his successful management, for so long a period, of the similar work with which he has been entrusted.

This testimonial, from the President of the Road with which Mr. Parker has been connected, is the more valuable as coming from one who fully understands railway management, and who has had ample opportunity of witnessing Mr. Parker's qualifications, and will be responded by every railroad man in New England.

Wilmington and Manchester Railroad.

A Commencement made at this end of it.

Thursday last—the 23d of February—was a day of bright anticipations to Wilmington, as well as of grateful remembrances. On this day a beginning was made at this end of the Wilmington and Manchester Rail Road; a work in which is involved high hopes of enduring prosperity to our community, with a greatly enlarged circle of business and social relations.

The place selected for striking the first blow was near where the "old brick house" stood, a little west of the Brunswick river, about two miles from town. Thither repaired many hundreds of our population, of both sexes, and of all ages. The steamer Calhoun made two trips to the Brunswick river ferry, going round the north end of Eagle's Island, being at each trip well filled with passengers.

The assembled multitude was addressed by Dr. F. J. Hill, and Messrs. J. G. Wright, and G. J. McRee, all of whom portrayed in vivid colors the great

benefits which must accrue to this section from the completion of the road, and exhorted its friends to unflinching perseverance in their noble enterprise. At the conclusion of the remarks of the gentlemen, several persons seized the spades, and "broke ground," amid the loud cheers and huzzars of the assemblage, and the firing of cannon, both there and at Market Dock in town. This ceremony over, all present were invited to partake of a collation provided by the Committee of Arrangements. After this had been dispatched, the company dispersed, well pleased with the day's work.—*Wilmington Chron.*

Improvements in the Manufacture of Iron.

[Specification of a patent granted to Samuel Lees, Park Bridge, Lancaster, iron merchant, for certain improvements in the manufacture of malleable iron.]—*Mechanics' Magazine*.

These improvements refer, 1st, to the piling, and 2d, to the rolling of malleable iron.

1. Instead of piling the flat bars horizontally, as has hitherto been customary, the outside of the fagot is composed of flat bars, dovetailed or overlapped, and placed at right angles to each other. The inside of the fagot is made out of pieces of scrap or other iron, which are arranged vertically, or vertically and horizontally, whereby the bar, when rolled out into shape, will be of greater strength and less liable to laminate than those made after the old method.

2. The improved rolling mill consists of a main shaft, driven from any prime mover, on which is geared a spur wheel, whereby the grooved rollers are driven. The first of the series of grooves in the rollers is open at the side, so as to admit of projection from the frame entering partially into this groove. The bar is first passed through the second groove, and the indentation formed in the side: it is then caused to pass edgewise through the first groove, whereby the bar is reduced to the proper size, while the projection, taken into the indentation, prevents it being compressed out of shape. The bar is then passed through the rest of the grooves and finished. The form of the grooves may be varied so as to give any desired form to the iron, and the bottom roller made to revolve in an opposite direction to the top one. Above the rollers is a frame, which is made to travel backwards and forwards by means of suitable gearing driven from a pulley on the main shaft, and which carries a rod to which is suspended the bar to be rolled.

Claims.—1. The mode of piling or fagoting the flat bars. 2. The rolling mill in which the indentation is maintained by means of the lateral projection. 3. The mode of causing the rollers to revolve in opposite directions. 4. The arrangement of gearing for driving and reversing the frame from which the bar to be rolled is suspended.

The happy and encouraging improvement of the market, in everything that relates to mining and mineral property, is now far too obvious to need any extended comment. This process of improvement and revival has been steadily making head for several months past; and except, perhaps, in the particular instance of copper, and, consequently, in the mines producing that important metal, we doubt if it is really desirable that prices should ascend much higher than their present quotations; notwithstanding, we believe they will go further up yet. They may not for a month or two, as we are disposed to think, reach their culminating point; for, with the demand which a fast rallying commerce is daily sending in upon the market, with wheat at 45s. per quarter, and the three per cent. consols up to 94, it is hardly supposable that so important a class of articles as the home raised metals can continue at their present figures. In the world of commerce, however, as in the physical world, there is between action and reaction an intimate relation and affinity. If prices are forced up rapidly and purposely, the method of their rising will but accelerate their fall. It is true that commerce, like the ocean, has its tides, but the less they are interlarded with the less labor will be wasted, and the more fully the two great elements will accomplish their beneficial purposes. We want the markets to be preserved from frequent and artificial fluctuations, and also that mining, in all its branches, should put on the character of a settled business rather than of an irregular speculation. To adventurers and to practical

miners, to all and to each, we may confidently say, "there's a good time coming"—a time when those who have commercially suffered from the operation of the new law, or from the disturbed state of the markets, continental and insular—a time, we repeat it, when their just success and their fair remuneration will be placed on a more permanent footing.—*London Min. Jour.*

The Effects of Railroads upon Real Property.

In estimating the value of projected Railroads and Railroad stocks, few persons look at the inevitable changes produced in the condition and in the value of property through which a Road may pass. The immediate and the eventual results in the simple value of property are such as fully to reimburse a State for the outlay in construction. Massachusetts owes to its Western Railroad the great changes that have taken place throughout the whole line of the Road, and more especially at its terminus, Boston.

This increase is not confined to the mere termini, but to all towns and villages within the range of the Road. The population of Massachusetts, so very sluggish for many years, as regards increase, has received an impetus from its Railroads, which is more than commensurate with the enhanced value of property. Thus in some of the small towns in that State, their census returns show the following rapid changes between 1840 and 1845, (only five years) in their population:

| | |
|----------------------|---------------------|
| Roxbury 67 per cent. | Lowell 38 per cent. |
| Brookline 50 " | Worcester 56 " |
| Cambridge 33 " | Springfield 33 " |
| Chelsea 128 " | Fall River 59 " |

It may be said that every farm, every acre through which a Railroad passes is enhanced in value thereby at least one dollar per acre. The following remarks are extremely pertinent to the subject, and are worthy a careful consideration. Similar remarks might be written for our own latitude, (Maryland.) If the Baltimore and Ohio Railroad were now finished, there is little question that the enhanced value of property throughout the line, would be "three times the cost of the Road"—to say nothing of the increased business that would be derived directly by our Baltimore merchants. In that event, the number of passengers from the Ohio to Baltimore would no doubt average 1000 per day throughout the year, provided the Company adopted the minimum rates of fare. Baltimore itself would derive a much larger revenue from the Road than the Railroad Company itself.—*Baltimore American.*

In connection with the above, the *American* quotes the following extract from a letter written by the President of the Nashville and Chatanooga Road, showing the effect that the contemplated construction of this road has produced in Tennessee.

"There was at the time of making up the subscription to the Nashville and Chatanooga Railroad, much said, and conflicting opinions expressed, with regard to its effect upon the value of real estate, growing out of expected enhanced value of the products of the soil, and increased business in the towns; in consequence of which I have taken some pains to make up something like an average of the present rise above the value two years ago, and find it varies in the country from one dollar per acre in the mountains to as high as fifty nearest Nashville; and that the lots adjoining the city have risen fully three hundred dollars an acre, and many of them more than that, and the lands out from three to ninety miles from Nashville have generally risen and actual sales made at advances varying from five to fifteen dollars an acre. And the valley lands beyond this point in the mountains have risen from three to ten dollars per acre, near the road line. I have then determined that a fair and very low average rise on the lands ten miles each side of the railroad would be five dollars an acre already, which is a gain to the land holders of Tennessee, and on the line of road, of \$64,000 per mile of road, or \$9,728,000 on the whole one hundred and fifty miles, equal to over three times the cost of the road, which will not be as much as \$2,000,000, fully equipped and under way.

The rise in town property has been in as great a proportion, making at least \$1,300,000, which, added to the \$9,728,000, would make \$11,028,000.

This may look large to those that have not had their attention called to this subject, but it is so nevertheless. But even if it were only one half, or only one fourth, it would be equal to the whole cost of the road. Thus, when it is recollected that all the money subscribed in Tennessee is laid out again in the State, and circulated and kept at home, the cost of the road and much more is already a gain to the country."

South Carolina Railroad.

We have received from Col. James Gadsden a pamphlet containing the proceedings of the stockholders of the South Carolina Railroad Co., and the Southwestern Railroad Bank, at their annual meeting on the 13th and 14th ult. Under this road is included not only the main trunk line to Hamburg, but the branches to Columbia and Camden. The report of the directors was presented by Col. Gadsden, president of the road, which we place before our readers.

As this is one of the leading roads in the country we devote to it a large space in our columns, as we are desirous of placing its present and prospective condition before the public. The railroads of South Carolina have secured the services of her ablest men, and their management has been such as to promote the interest of the stockholders, and the convenience of the travelling public; and we are glad to see that the services of the directors have been appreciated by their re-election.

To the Stockholders of the S. C. Railroad Company:

GENTLEMEN:—In presenting their Fifth Annual Report, the Board of Directors have the satisfaction to state that the Camden Road has been completed, and has been in operation since November last, as a profitable Branch of South-Carolina Railroad. Accompanied is the Report of the Chief Engineer, affording the details as to survey, management, and modes of construction.

It is not in the power of the Board, from the short period that this Branch has been in operation, to arrive at certain conclusions as to the extent of future profits. The Road was not opened for its entire length to Camden before November; and to the first of January, the business credited to it amounted to \$47,603 67, and the books for the month of January show \$9,524 17.

There has been accommodated on the Road to the first of February, 6,828 passengers, and there has been transported from it 22,972 bales of cotton, with a corresponding amount of up freight. In the original estimate of the probable business to be depended on, 30,000 bales of cotton was assumed as a maximum, nearly 4-5ths of which has already been realized, and probably, not to exceed one half of the crop, has been forwarded from that section of the State. The passengers in number have greatly exceeded all previous calculation. The passenger which makes the connection daily with the Charleston trains, both up and down, without any additional expense, but what may be involved in the injury to machinery in performing a few extra miles, extends the accommodation of a day communication, and at considerable profit to the Company, between Camden and Columbia, and the Districts of Kershaw, Sumter and Richland.

The gross receipts for the entire Road for the year 1848, was.....\$655,575 30
The gross expenditures connected with the working of the Road, was.....\$397,604 99
Deduct extraordinary expenses for machinery, motive and car power, and materials on hand,.....94,124 59

\$303,480 40

Earnings for 1847,.....\$352,094 90
Being at the rate of 46 per cent on current, and a fraction less than 61 per cent on the gross expenses, compared to the receipts.

The gross receipts for all the Roads from the legitimate sources of business for 1848, was.....\$800,073 54

The gross expenditures were.....398,802 79
Deduct extraordinary expenses

for new cars and materials on hand, and machinery,.....55,313 95

Leaving for current expenses.....342,488 81

Earnings for 1848,.....\$456,584 13
Being at the rate of 42½ per cent of current, and about 50 per cent of gross expenditures compared to receipts; showing an increase of the business of the Company for the year 1848, of \$144,498 24, or 23 per cent above the year 1847—of \$40,008 excess, or 13 per cent on current expenses, and a surplus net profit of \$104,489 93.

The business of 1848, contrasted with that of the preceding year, shows

An increase in up freight of 8 per cent.
An increase in down freight of 71 do.
An increase in through travel of 131 do.
A decrease on local travel of 21 do.
An increase of total earnings, near 30 do.

This statement is encouraging, as showing a healthy increase in every branch of transportation, with the exception of that on local travel, which might probably have been explained by the substitution of family and season tickets, at a low rate, compared with the higher regular fare, if the Central and Georgia Roads, from Savannah and Augusta did not exhibit a greater corresponding reduction on local and way travel in their reports. The decrease is falling off on the South-Carolina Road being very inconsiderable, but 2½ per cent, while the increase on the other three sources of revenue have been 8, 13½ and 71 per cent.

The Stockholders are respectfully referred to the Report of the Auditor for the state and condition of the finances, and as to the application of the revenues of the Company for the last year.

The tabular statements give in detail the business of the Road, and the sources from whence it has been improved. Attention is particularly invited to the "comparative state of income," from 1844 to 1848, both years inclusive, and the appropriations for dividends, within that period, amounting on an average to 540-100 per cent per annum and exceeding in rate the dividends of every Bank but two in the city of Charleston. One semi-annual dividend, within that period, and ending with the close of the year 1848, has alone been withheld. Its application, however, to the liquidation of the immediate liabilities contracted in the completion of the Camden Branch, and to the payment for the purchase of permanent locations for Depot and Workshops, was promotive of the best interests of this Company; and in carrying out the objects which have been strongly urged on the consideration of the Directors by the Stockholders, a confidence is felt that this prudent and judicious measure must meet with their approbation. Provision has thus been made for the accomplishment of all these objects, and arrangements are now in progress for occupying the Company's domain with more appropriate buildings than those which hitherto, but inadequately afforded the security and accommodation needed.

The Road is in good working condition. The Trains, both freight and passenger, have run for the whole season with unprecedented regularity, and freer from casualties than in any former year. Much credit is due to the zeal and fidelity of the Officers of the Company for the service which the Road and Motive and Car power has been made to perform at a period of uncommon requisitions on all—involving the necessity of often working by night as well as by day.

Restricted as has been the means of the Company contrasted with the demands on its immediate responsibilities and obligations, and deranged as has been, for the last two years, the monetary relations of the world, precluding all possibility of negotiating favorable loans on time, your Direction has not had it in its power to press forward with the contemplated new workshops and depot at the Charleston terminus, as rapidly as was desirable. They have not been able likewise to take any measures, either to improve the working of the Inclined Plane at Aiken, or to examine further into, and decide on a substitute, by succession of grades, within the profitable power of locomotives, should that measure, on calculation, be found most recommended. Either, however, will impose additional demands on the Company's Treasury, and for which it has not been prepared to meet the last year. Under the authori-

ty of the Stockholders to renew annually a portion of the Road between Charleston and Branchville, with a heavier Rail, the Direction have availed of the low price of iron recently, to secure a quantity equal to ten miles of the track, and which the Superintendent has commenced relaying from the six-mile-curve, proceeding northwardly, that portion of the Road requiring the earliest attention. The Board are likewise encouraged with a hope, that an order for an additional quantity of Rail-iron, equal to the renewing of the Road for the entire distance from Charleston to Branchville, transmitted some time since to England, has been filled by the Company's Agents, and on such conditions, as to time, as will render payment easy.

Besides these permanent and indispensable improvements on the track, contracts have been made and arrangements are in progress for adding largely to both the motive and car power, so as to be prepared for the increased business, which the certain completion of the Western and Atlantic Road to Chattanooga next fall must give direction to in this quarter. The gradual and steady increase of transportation on the Road, as exhibited in the tabular statements—the completion of the Camden Branch, extending its influence to an eastern section of the State, the produce of which has hitherto found access to market by other channels—the new avenues of western communications annually opening—the improvement by steam navigation of the external relations of Charleston wherever commerce circulates, are all encouraging prospects for the South-Carolina Railroad, if the Company can be but reconciled to further, but comparatively small expenditures, which are absolutely necessary, to place the car and motive power in a condition to meet all the requirements which may be made on it, and to extend that protection and accommodation at workshops, depots and stations, which will ensure the most economical discharge of the business to be performed.

Having now fulfilled all its chartered obligations, and by the construction of the Camden Branch, authorized to convert a large State claim against the Company, which might have been pressed for immediate payment, into a funded debt, maturing at a remote period, and having resolved on no new enterprises, the Board has not neglected the next obligation devolving on the Corporation—for some provision for the extinguishment of its debts on the maturity of its bonds.

As to the purchase of Real Estate, improvement of property, and in the construction of the Camden Branch, there had evidently been an accumulation of property fairly chargeable on the cost of the Road, and not against its revenue. A Committee consisting of Messrs. Elmore, Boyce and Gadsden, was appointed to report on the disposition of that fund, and on some plan for preparing for the gradual extinguishment of the Company's debt. Their report in detail, is herewith submitted.

Another plan, however, has been suggested by the Cashier of the South-Western Railroad Bank, and which is likewise presented for your consideration; that with all light before them, the Stockholders, in their judgment, may decide on the one which, while it places the important and ultimate object of freeing the Company from debt beyond a contingency, may accomplish it at most convenience and at the least sacrifice to the share owners.

The Committee's plan proposes the pledging the additional \$25 due on each share, by instalments of \$5, to be called in at periods corresponding to the maturity of the Company's bonds, with other securities named, and to convert the Company's property in Real Estate and Camden Branch into Stock, which compounded at 6 per cent. interest, will extinguish the entire debt in about eighteen years.

Mr. Holmes' plan is to distribute the expenditures in Real Estate and on Camden Stock, (as it has been realized from the earnings of the Company) in a credit of \$10 on each share, against the \$25 due, but with the pledge that there shall hereafter be appropriated semi-annually from the first earnings of the revenue \$118,873 60. A sum which, on calculation, has been found compounded at 6 per cent. interest, equal to the annual interest of the debt, and to the extinguishment of its principal in twenty years.

The Committee propose a fund, with the addition of the \$25 due on each share, as a pledge in aid of

paying the debt. The other taxes the annual revenue to a limited extent, in a sum which, as it accrues, with what has already been earned, shall be credited on the \$25 due on each share, until the double operation shall have been performed of extinguishing the liability of each share owner in the \$25 due on his stock, and likewise the entire debt of the Company to the bond holders. It is in short consenting to divide the earnings of the Company which might be distributed in dividends, one moiety to be passed to the credit of the share owner on his stock and appropriated to the extinguishment of the Company's debts, and the other moiety to be paid directly to the Stockholder.

By the Committee's plan, the direct annual dividends or profits may be larger, but the Stockholder will have to meet the instalments on the \$25 as called in.

By Mr. Holmes' plan, the annual dividend will be smaller, but the tax or first pledge of the revenue pays gradually the \$25 due on each share.

By the first, or Committee's plan, on its consummation there will be 42,810 shares represented in the Company at the par cost of \$100 each, and making the capital of the Company \$4,281,000.

By the second, the stock represented will amount to but 38,810 shares, or a capital in the Company of 3,881,000 dollars.

In again surrendering at this annual meeting, the administration of the affairs of this Company, into the hands of those, who have through a succession of years confided in the present Board, its members have only to state, that it has been their policy, to the extent of available means, to preserve and improve the Company's property.—To enlarge gradually its power to meet the public demands—to be prepared to fulfil, and with promptness, the obligations as common carriers—and to enlarge and render more permanent at Workshops and Depots those accommodations which are necessary to protect and discharge with satisfaction and economy, the constantly increasing business of the Road. The suspension of some of these objects hitherto, and however important, have not been from design; and indeed, the conflict of opinion, and the indecision of the Stock holders themselves, in relation to the proper location of Workshops and Depots at the Charleston Terminus, has interposed the principal obstacle to those improvements not having been provided for earlier. In the further prosecution of this policy, and without which the Company's property must dilapidate, and fail to accomplish the objects for which the enterprise was undertaken; additional expenditures must be submitted to. Was half a million of dollars added to the capital already invested, the South-Carolina Railroad in its condition, could be made to bear a favorable comparison with any in the United States, and at a cost per mile far below any of the great roads which have been presented as the models of more practical and economical sections of the country.

A different policy, and larger dividends than have been declared, may possibly have had a more favorable influence on the immediate market value of the stock—but then it would only have been reserving the present and temporary trials of the share owners; (but in a fourfold severity) for successors who may have embarked under the deceptive promises of large profits—and would have denied to the Board that confidence they now feel, of passing a property to successors, which has not been impaired under their administration, but in such a progressive condition, as under proper management, is capable of fulfilling the expectations of the hitherto most sanguine and confident.

Respectfully submitted by
JAMES GADSDEN, President.

South Carolina Railroad Company Statement, based on balance sheet, taken 31st December, 1848.

| Dr. | |
|---|----------------|
| To stock for \$75 per share on 34,810 shares..... | \$2,610,750 00 |
| Instalments forfeited..... | 311,672 65 |
| | 2,922,422 65 |
| Income, for balance derived from this source, since July, 1844, not applied to dividends, but to road purposes... | 348,479 65 |
| | 3,270,902 30 |

| | |
|--|--------------|
| Sterling bonds, for foreign debt at 5 per cent., payable 1866..... | 2,000,000 00 |
| State of South Carolina, balance 6 per ct. loan, exclusive of interest.. | 258,786 54 |
| State of South Carolina, for loan of \$100,000 00 with interest to January, 1848..... | 178,223 60 |
| Bills payable, for sundry obligations, including \$9,161 25 notes for dividend..... | 163,746 97 |
| Bond do. for sundry bonds | 217,000 00 |
| Script, new, for amount in circulation..... | 119,374 50 |
| Do. old, do..... | 12,434 18 |
| Interest scrip, for balance of amount issued for dividend No. 9..... | 118,675 00 |
| Pay rolls, for unpaid salaries..... | 8,567 07 |
| Work done and articles furnished, for various accounts due by company..... | 36,383 18 |
| Arrears of dividend, for unpaid dividends..... | 569 25 |
| Dividend No. 9, for balance unpaid..... | 22,235 63 |
| Stock of the Camden br.: Rec'd in cash. 237,700 " stock.. 25,500 | 263,200 00 |
| Through tickets, bal. due for sales of thro' tickets to places in Georgia, Alabama, Mississippi and Tennessee..... | 13,976 00 |
| S. W. railroad bank for 1 year's interest on bonds of \$200,000..... | 6,500 00 |
| Coupons, for amt of unpaid interest on sterling bonds..... | 7,333 33 |
| | 3,427,005 25 |
| | 6,697,907 55 |

Cr.

| | |
|---|----------------|
| By purchase of the Charlotte & Hamburg road, embracing road, machinery, etc..... | \$2,714,377 50 |
| Lands attached..... | 59,741 30 |
| Negroes..... | 11,963 19 |
| | 2,786,081 99 |
| Construction of the Columbia branch.. | 2,363,654 49 |
| Lands purchased since Jan. '44. 29,442 08 Less to credit of Aiken lands. 35 75 | 29,406 33 |
| Negroes purchased in 1848..... | 750 00 |
| Rail iron account, purchased since Oct. 1844: | |
| For Hamburg road..... | 60,094 92 |
| For Congaree bridge in 1848. 4,945 39 | 65,040 31 |
| Charleston depot, "new account," purchased property in 1848..... | 34,871 23 |
| Improvement of property, amount exp. since July, 1845, in purchase of locomotives, and building cars..... | 136,101 99 |
| Improvement of depots, amount expended since July, 1845, in improving depots, and building sheds at different stations..... | 14,037 39 |
| Stock of materials, balance of amount reported on hand at shops to be applied, December 31, 1847..... | 5,204 30 |
| Share in the railroad purchased 23d of March, 1844, without corresponding share in bank..... | 40 00 |
| Suspense account, Gen. Jones' debt.... | 8,490 00 |
| | 5,943,678 03 |
| Bills receivable, sundry notes. 7,861 24 | |
| Bonds receivable—bonds... 43,606 00 | |
| | 51,467 24 |

| | |
|--|------------|
| Cash on hand | 21,346 78 |
| J. King, Jr., chief engineer, bal. due by agents | 57,653 58 |
| Postoffice department, due for transp. mails | 10,065 62 |
| Articles furnished by compa- ny—due by sundry persons | 6,669 12 |
| Officers of comp'y—in hands for disbursement | 13,945 77 |
| Bank of Camden—on deposit | 195 25 |
| Construction of Camden br. —expended | 580,417 43 |
| Mutilated script to be burnt | 8,425 50 |
| Palmer, Mackillop, Dent & Co.—to credit of com- pany in London | 1,043 23 |

754,229 52

| | |
|----------------------------|--------------|
| Liabilities as above | 3,427,005 25 |
| Assets as above | 754,229 52 |

Bal. of indebtedness, £,673,775 73

Statement of the Receipts and Expenditures of the S.
Carolina Railroad Company, for the year ending
31st December, 1848.

| | |
|--|--------------|
| To amount from freight | \$535,594 56 |
| " " passage | 204,995 47 |
| " " mails | 39,106 24 |
| | 779,696 27 |
| To am't from through tickets sold by the Georgia railroad and stage lines | 16,368 12 |
| Minor Resources, viz:— | |
| Small package drayage | 507 29 |
| Storage | 1,335 79 |
| Rent | 580 00 |
| Wages company's negroes | 1,029 65 |
| Oak wood sold | 556 42 |
| | 4,009 15 |

800,073 54

Legitimate Business.

| | |
|---|-----------|
| To amount taken from current expenses of last year, and subsequently charged to Camden branch | 9,407 59 |
| Do. taken from stock, machinery, etc., on hand 31st December, 1847, and charged to Camden branch | 22,298 70 |
| Construction of cars | 500 00 |
| Do. sales of slave Joseph | 3,640 00 |
| Do. sales of scrap iron | 173 80 |
| Do. sales of damaged corn | 155 92 |
| Do. sales of old inclined plane rope | 221 87 |
| Do. profit on sales of bricks | 73 50 |
| Do. exchange of lots in Orange- burg | 196 88 |
| Do. over allowance in declaring dividend No. 9 | 3,946 80 |
| Do telegraphic contract | 40,615 06 |

Ca.

| | |
|--|----------------|
| By reduction of indebtedness in the past year: | |
| From | \$2,790,494 31 |
| To | 2,672,775 73 |
| | 117,718 58 |
| Interest on sterling bonds | 108,801 15 |
| Lands | 4,211 87 |
| Improvements of depots | 2,879 07 |
| Rail iron, including \$4,945 39 for Con- garee bridge | 29,548 29 |
| Negro Essex | 750 00 |
| Lands for new depot, etc., in Charles- ton | 34,871 23 |
| Dividend No. 9, script, for year ending June 30, 1848 | 143,047 50 |
| Do. extra, not included when No. 9 was declared | 28 12 |

441,885 81

Ordinary Current Expenses—
(Exclusive of interest on debt to State,
about being funded, viz: on \$258,-
786 54, and \$100,000, \$168,706 28—

making total debt \$527,492 82.)

| | |
|--|-----------|
| In Road Department— | |
| Superintendence and wages | 43,672 08 |
| Building materials, including lumber for cars | 3,534 26 |
| Timber | 25,234 14 |
| Spikes | 5,148 88 |
| Provisions for negroes | 5,696 17 |

83,285 53

| | |
|-------------------------------------|-----------|
| In Transportation Department— | |
| Agents, clerks, laborers, etc | 90,669 50 |
| Locomotive crews | 41,874 57 |
| Inclined plane, new rope | 6,151 46 |
| Provisions for mules and dogs | 971 06 |
| Drayage | 943 55 |

140,610 14

| | |
|---|-----------|
| In Machinery Department: | |
| Machinery bought, including a piling machine, and loco- motive engine Memphis— \$9,250 | 22,743 34 |
| Materials | 12,666 27 |
| Oil | 4,230 06 |
| Tallow | 3,952 19 |
| Duck | 305 43 |
| Coal | 3,666 22 |
| Wood | 24,966 08 |
| Charleston Workshops | 63,225 53 |
| Aiken do. | 1,702 01 |

137,447 12

| | |
|---|-----------|
| In contingencies: | |
| Salaries of officers | 6,890 00 |
| Exchange | 593 16 |
| Interest, general | 18,318 67 |
| Damages, including Gaze's case, \$1090 | 4,800 36 |
| Negro clothing | 196 00 |
| Office rent, stationery, etc | 6,631 81 |

37,460 00

THOM. WARING, Auditor.

The following gentlemen were chosen Directors
for the present year.

| | |
|---------------------------|---------------------|
| James Gadsden, President. | |
| Wm. Hampton, | Joel Adams, |
| W. C. Dakes, | A. H. Boykin, |
| John Boyce, | S. Mory, |
| F. H. Elmore, | Alex. Mazzyak, |
| A. Wallace, | Chas. A. Maywood, |
| Robert Martin, | Dr. D. J. Campbell, |
| R. Caldwell, | Her Boyce. |

Gold in California, and Other Countries.

At the Society of Arts, on Wednesday evening, Mr. Tennant, G. G. S., read a paper "On the Different Mineral Substances, which may be found with gold in various parts of the world, (including California) but which have been overlooked." At 8 o'clock, Baron Goldsmid took the chair. The secretary, after reading the minutes of the last meeting which were confirmed, alluded to the interesting paper which had been read at the last meeting, by Mr. Highton, "On the Electric Telegraph," and advertising to the fact that the Society had been the first to introduce to the notice of the public that valuable material, gutta percha, stated, he believed the time was not far distant when, through its agency, a submarine communication would be established between England and Ireland, as well as France and England; and produced, for the inspection of the members, a combination of six copper wires, separately insulated by a new process, and twisted together into a rope, by which the insulation of each wire is secured, and the whole rendered exceedingly strong and compact, and in this state it would be placed at the bottom of the sea, thus forming a submarine communication. The specimen was sent by Mr. Francis Whishaw.

Mr. Tennant commenced by observing, that the California gold was similar to that found in the Brazils, but lighter in color; the existence of gold in that country had been known for centuries, the first discoverer of it having been Sir Francis Drake; various substances had likewise been found there, such as mica (which might be seen in the granite in the streets,) copper, and iron pyrites, much resembling gold in color; the disappointment consequent on the discovery of this, had, probably disgusted the first adventurers, who had abandoned it without further attempts to prosecute and explore the sources from

whence it was derived—that probably the gold had been lying there for ages. Such may occur in any new country—for instance, Australia, Borneo, or India. Gold was first discovered in the Brazils in the beds of rivers, by washing the alluvial soil; he had himself seen particles of gold in the Grampian Hills, but he doubted much whether it would pay the expense of working—they might get 11., but it would cost 21. 10s. Gold was likewise found in Wales in sulphuret of zinc, and in Cornwall among tin. Mr. Tennant here exhibited several specimens of gold; these consisted of—1. Foliated gold with quartz, from Mexico.—2. Crystallised Gold.—3. A round pebble, weighing 9 ozs. 14 dwts., containing over 6 ozs. of gold; both these, from Brazil, had formed part of the Stowe collection.—4. Gold from Cornwall.—5. Gold in sulphuret of zinc, from the Hwnyswn mine, in Merionethshire, besides several specimens of granular gold from the west coast of South America, Africa, and California. According to assay, furnished by Mr. Henry, the gold of California, of 100 parts, was composed of—gold, 88.75; silver, 8.88; copper, 0.85; siliceous residue, 1.40—99.88.

In Brazil, according to Mawe, eight men had, in four hours, obtained 203 ounces of gold from a portion of soil not two tons weight, taken from a deep hole at the bottom of the river. He should not be surprised to hear that diamonds, rubies, emeralds, sapphires, and other precious stones, were to be found intermixed with the gold; and to this, should there be any adventurous parties at present in the Institution, who thought of going to California, he wished particularly to draw their attention, that while they were seeking for gold, probably more valuable substances might be overlooked. The average value of gold was about 31. 15s. per ounce, that of diamonds in their rough state was about 50s; while if free from defects, flaws, &c., they were of greater value. He had, therefore, taken Jeffries' estimated value of pure diamonds, and this was generally considered the best. Diamonds were in general weighed by the carat, which was a term well known to jewellers, and equivalent to 4 grains. Thus a diamond of—

| | |
|----------------------|--------------------------|
| 1 carat was worth £8 | 10 carats was worth £300 |
| 2 " | 16 20 " |
| 3 " | 72 30 " |
| 4 " | 128 50 " |
| 8 " | 200 100 " |

From this it would be seen that, according to the weight, the value of the diamonds was enhanced most materially—so that the heavier they became they received a considerable increase, and apparently most disproportionate ratio of value. The largest diamonds were at such an enormous cost, that it was impossible for private individuals to purchase, no one being sufficiently wealthy to lay out their capital on precious stones of such a price. The finest private collection of diamonds he believed to be in the bank of England, being the property of the late Mr. Philip Henry Hope; there had been several lawsuits with regard to heirship of these jewels, and the suit is yet pending in our courts. To those who were admirers of diamonds, he would recommend a visit to the Tower, to see the Crown jewels deposited there, and fine specimens might daily be seen in the jeweller's shop windows in London. It might be said that it was extremely difficult to detect the diamond in its true face; but nature had ordained that, in all inorganic substances, there should be some distinguishing mark, such as crystalline form, specific gravity, hardness, fracture. Mawe, in his account of the Brazils, says, when they were first discovered, so little was their value known, that they were used as counters. Quartz, which is a very hard substance, differs from true diamonds, inasmuch as it always breaks with a curved fracture, generally termed by mineralogists conchoidal, or like a shell. Topaz occurs in a rhombic prism when perfect; if the edges are destroyed by the friction of a long transport from the mountains where they are discovered, or any other cause, it breaks with a smooth fracture at right angles with the axis of the prism, as if polished by a lapidary. On the contrary, the diamond breaks in four directions; which will yield an octahedron. The usual crystalline form of the diamonds are cubes, octahedrons, and dodecahedrons, occasionally with spheroidal faces, they are never found in rhombic or six-sided prisms, and that is a sure guide

to detect them from the others, when found crystallized. In the collection he had purchased at Stowe, his friend, Mr. Herz, had inspected a pebble with a diamond on it; he (Mr. H.) imagined that the diamond has been fastened on there by gum, or some other resinous matter; on applying boiling water, it was found not to loosen, but by washing the soil away, it was found half as large again; in addition to this two others were discovered, besides a large quantity of gold. This might be the case in California; he was no advocate for going there, but he thought it not all improbable that different precious stones might be discovered there.

But returning to the gold, he would tell them a few simple tests to detect an adulteration of the precious metal. They had heard brass filings had been exported there to mix with the gold-dust; this was much lighter than gold. The specific gravity of gold had been tried by four different trials. The following had been the result:—15, 15.7-10, 16.4, 17; so that, as a mean, the specific gravity of gold was 16 times greater than water; while that of copper pyrites was 4.5; iron pyrites, 4.3 mica, 3. The blow-pipe was, likewise, a most useful and simple instrument; this can be used with a penny candle and a half-penny worth of charcoal—so that, for 8d. or 10d., a primitive furnace to commence operations with, can be purchased.

Gold may be cut with a knife like lead, and bent and beat out in thin leaves. Iron pyrites cannot be cut, or even scratched with a knife. Copper pyrites is brittle. Mica, foliated and elastic. The blow-pipe applied to gold, it retains its color; while copper and iron pyrites lose theirs, and the latter becomes magnetic. Gold is also not acted upon by nitre, muriatic, or sulphuric acid singly; when the two former are combined, it is only then soluble. If any of the other three minerals were reduced to powder, either of these acids will readily act on them. These were simple tests, and which any one, without the slightest knowledge of mineralogy, could avail himself of. He had seen a recent work called *Jackson on Minerals*, which he wished to allude to, on account of the erroneous statement contained in it, with regard to diamonds. He should not have adverted to this; but such errors in general, when they appear in print, if not corrected, go down to posterity. He says—"Draw a fine file over the stone; if it does not scratch, it is a good diamond." This was not the fact; a fine file drawn over it might cause serious injury to the stone, by detaching some of the facets in the direction of the cleavage plains. He then states, if very minute, place it between two half-crowns; then place it between the finger and the thumb; if a diamond it stands—this was perfectly useless. Another author said, that a good diamond, placed on an anvil, will remain perfectly whole when struck; but an indentation will be seen in both the hammer and anvil. For his own part, he should not like to have any diamond of his subjected to such a test. The diamonds are very brittle; and a valuable diamond could be broken easier than quartz.

Dr. Mantell required of Mr. Tennant some further explanation of the formation of gold and of the diamond.—Mr. Tennant said, that gold was found in quartzose veins. The rock was argillaceous schist, which readily decomposes. That no doubt electricity had been at work. It was impossible to say how Nature was working in her large laboratory. The lighter particles were washed out, and the great body of the gold remained behind. So much had already been written in the newspapers about the formation of it. With regard to the diamond, a distinguished chemist had devoted several months to its study, and was about to publish on its properties, which, coming from so eminent a man, he had no doubt would throw a great light on the subject—the gentleman alluded to was Mr. Faraday. Mr. Tennant concluded his paper amid the prolonged cheers of his audience.

Dr. Mantell observed that, according to Sir Rodrick Murchison's work, gold had been discovered in diluvial deposits in Siberia; and these were generally the richest. His opinion was, that the Ural Mountains had risen in that convulsion; and that he believed large deposits of gold existed in the rocks, and had been there for ages, at the same period when those large animals, now extinct, and which they knew had existed there from their carcasses having been found imbedded in ice. If he

went to California, he should seek the place where the largest pieces were to be found; and by tracing that, endeavor to come to the fountain head.—The diamond had been considered to be a crystallized gum, or resin, from a plant. It was known to be pure carbon; and when consumed, the residue was like charcoal from a piece of wood. Sir Isaac Newton was of the same opinion of the gem—the refraction of the light being the same as on opal and amber, which were both substances of a vegetable nature.

After a few observations from Mr Percival Johnson, who stated, that as they got deeper in the mines the gold diminished, Baron Goldsmid apologized for addressing the society, and stated, that his only motive in doing so was, to caution those young people who might not only be risking their fortunes, but their lives, in going to California. When the gold mines were first stated here, a company, with which he was connected, had raised 1,000,000*l.* to trace the gold veins. The shares were issued at 10*l.*; and this before a grain of gold had been acquired. The produce of the different companies he had obtained. The Imperial Brazilian, in 25 years, had produced 1,500,000*l.*; Morro Velho in 10 years, 416,000*l.*; and the Cata Branca, in the same period, 240,000*l.* That at this time, after 25 year's work, they had obtained their money back, with 5 per cent. for the last 10 or 12 years; and the mine was now exhausted. The only benefit it had been to science, was the discovery of palladium, which had been applied to telescopes for astronomical purposes.

The thanks of the society were voted to Mr. Tennant for his interesting paper. Several diagrams of the different crystals of diamonds, topaz, and quartz, as well as others, giving their component parts, were exhibited.—*London Mining Journal.*

The Iron Manufacture. British and American.

We continue the article published last week, in reference to the manufacture of iron.

As compared with 1847, our tables exhibit, in respect to pig iron, an increase in the production of 60,000 tons; in the stock of 10,000 tons; and in the exports to the United States, of 45,242 tons; while the shipments have decreased to British America 2029 tons, and to ports in Europe 25,638 tons. Consequent on the foundry consumption and shipments at this season being on a very high scale, together with the existing large production, the stock of pig iron will in all probability, accumulate for some time to come. It may be worthy of remark that there has lately been a considerable quantity shipped, and is now laying for sale at Runcorn and other points in Lancashire, of which we take no notice in the annexed estimate. In 1847 the quantity used for local malleable iron purposes was 124,800 tons, whereas this year it has been exceeded by 31,200.—The progressive extension of this branch of the Scotch iron trade has exercised an important influence in keeping the stock of pig iron low, while the moderate price of bars has induced large foreign and home orders, which formerly were executed in England and Wales. In 1847 the export of Scotch manufactured iron to foreign ports was 3,520 tons, and in 1848 it amounted to 10,390 tons.

Considering the probable continuance of the American demand for pig iron—the settlement of political affairs on the continent, and the evident symptoms of improvement in the commerce of this country, it does not appear unreasonable to anticipate for this important branch of national industry some participation in the benefit of a revival in trade; and, it is to be hoped, this may be the effect of legitimate demand, and not the result of speculation.—During the present year, speculation in pig iron has been on an exceedingly limited scale—transactions of the kind having more the character of jobbing, than of speculation. The extreme variation in price throughout the year has been about 12*s.* 6*d.* per ton. Since the 31st inst., there has been a rather extensive business done here in Scotch pig iron; the price has advanced during the interval about 2*s.* to 2*s.* 6*d.* per ton; and the market closes firm with buyers of mixed numbers at 4*s.* 6*d.* per ton net cash free on board. Manufactured iron continues steady—bars at £5 5 to £5 15; nail rods at £6 10; plates and sheet £7 10 to £8—4 per ct. discount for cash.

Pig Iron Works and Furnaces in Scotland.

| Works. | Works in Operation. | | Total. |
|--------------------|---------------------|---------------|--------|
| | In blast. | Out of blast. | |
| Gartsherrie..... | 16 | 0 | 16 |
| Dundyan..... | 9 | 0 | 9 |
| Clyde..... | 5 | 2 | 7 |
| Govan..... | 4 | 2 | 6 |
| Calder..... | 5 | 3 | 8 |
| Langhorne..... | 6 | 0 | 6 |
| Carnbroe..... | 4 | 2 | 6 |
| Glengarnock..... | 7 | 2 | 9 |
| Summerlee..... | 6 | 0 | 6 |
| Mankland..... | 9 | 0 | 9 |
| Coltness..... | 5 | 1 | 6 |
| Omoa..... | 3 | 1 | 4 |
| Shotts..... | 3 | 1 | 4 |
| Castlehill..... | 0 | 3 | 3 |
| Blair..... | 0 | 5 | 5 |
| Muirkirk..... | 2 | 2 | 4 |
| Garscube..... | 0 | 2 | 2 |
| Carron..... | 2 | 3 | 5 |
| Devon..... | 1 | 2 | 3 |
| Forth..... | 4 | 1 | 5 |
| Kinniel..... | 4 | 0 | 4 |
| Lugar..... | 3 | 1 | 4 |
| Eglinton..... | 2 | 2 | 4 |
| Lochgelly..... | 2 | 0 | 2 |
| Dalmellington..... | 1 | 1 | 2 |
| Total..... | 103 | 36 | 139 |

Works now erecting and nearly ready.

| | | | |
|---------------------|-----|----|-----|
| Portland..... | 0 | 0 | 2 |
| Nithsdale..... | 0 | 0 | 3 |
| | 0 | 0 | 5 |
| Total furnaces..... | 103 | 36 | 144 |

Shipped foreign in 1848.

| | | |
|-------------------------|--------|---------|
| From Scotland—tons..... | 95,690 | |
| Ireland..... | 2,883 | |
| England..... | 63,578 | 162,151 |
| Coastwise..... | | 237,833 |

Total tons..... 389,984

Comparative view of Exports, Stocks, Production and Prices, 1846-7-8.

| Exports. | 1848. | 1847. | 1846. |
|--------------------------|---------|---------|---------|
| France..... tons. | 5,859 | 24,836 | 35,567 |
| Jersey and Guernsey..... | 329 | 95 | 268 |
| Germany..... | 41,417 | 50,587 | 48,766 |
| Denmark, Sweden & Norw. | 7,054 | 9,416 | 2,580 |
| Russia..... | 1,220 | 962 | |
| Turkey and Egypt..... | 911 | 531 | 260 |
| Italy and Austria..... | 4,642 | 6,226 | 5,481 |
| Spain..... | 1,444 | 1,703 | 2,703 |
| Portugal..... | 535 | 283 | 435 |
| South America..... | 1,989 | 1,343 | 538 |
| West Indies..... | 161 | 215 | 170 |
| New South Wales..... | 641 | 1,458 | 607 |
| British America..... | 4,198 | 6,327 | 7,307 |
| United States..... | 90,285 | 44,993 | 13,918 |
| China..... | 575 | 175 | |
| East Indies..... | 950 | | |
| Total..... | 162,151 | 143,460 | 119,100 |

Stocks and Production.

| | Stock. | Production. |
|----------------------------|---------|-------------|
| Dec. 31st, 1846..... tons. | 145,000 | 580,000 |
| " 1847..... | 90,000 | 540,000 |
| Decrease in 1847..... | 55,000 | 40,000 |
| Dec. 31st, 1848..... | 100,000 | 600,000 |
| " 1847..... | 90,000 | 540,000 |
| Increase in 1848..... | 10,000 | 60,000 |

| PRICE. | | | |
|----------------|--------|---------|--------|
| | 1846. | 1847. | 1848. |
| January..... | £4 0 0 | £3 13 4 | £2 8 4 |
| February..... | 3 17 6 | 3 13 4 | 2 10 0 |
| March..... | 3 10 0 | 3 1 1 | 2 4 4 |
| April..... | 3 6 0 | 3 10 8 | 2 1 9 |
| May..... | 3 10 0 | 3 5 3 | 2 2 3 |
| June..... | 3 8 0 | 3 5 0 | 2 3 0 |
| July..... | 3 10 0 | 3 8 1 | 2 5 6 |
| August..... | 3 15 0 | 3 7 9 | 2 5 3 |
| September..... | 3 13 6 | 3 6 0 | 2 5 3 |
| October..... | 3 9 6 | 2 19 10 | 2 3 0 |
| November..... | 3 9 0 | 2 11 0 | 2 2 0 |
| December..... | 3 19 6 | 2 7 6 | 2 2 4 |

| 1845. | AVERAGES. | | | |
|---|--------------|---------|--------|--|
| 3 16 0 | 3 11 8 | 3 5 0 | 2 4 5 | |
| Malleable iron produced in Scotland:— | | | | |
| 1845. | 1846. | 1847. | 1848. | |
| Tons,..... 35,000 | 45,000 | 60,000 | 90,000 | |
| STOCK. | | | | |
| Stock on hand 31st Dec., 1847..... | tons, | 90,000 | | |
| Stock this date in stores and maker's hand..... | 100,000 | | | |
| Increase in 1848..... | 10,000 | | | |
| Furnaces in blast: | | | | |
| 1st June, 93; 1st August, 101; 31st December, 103 | | | | |
| Production in 1848..... | tons, | 600,000 | | |
| Add stock 31st December, 1847..... | 90,000 | | | |
| | | 690,000 | | |
| Exports as above..... | 389,984 | | | |
| Stock this date..... | 100,000 | | | |
| Consumed for malleable iron purposes | | | | |
| in 1848..... | 156,000 | | | |
| | | 645,984 | | |
| Leaving for local foundry, and inland consumption in 1848..... 44,016 | | | | |
| P. & A. FERGUSON & RHIND, | | | | |
| Glasgow, Dec. 30, 1848. | | | | |
| The imports of Scotch pig iron into the United States in 1848, were thus distributed: | | | | |
| New York..... | 55,373 tons. | | | |
| Boston..... | 23,930 | | | |
| Providence..... | 400 | | | |
| Philadelphia..... | 6,967 | | | |
| Baltimore..... | 1,216 | | | |
| New Orleans..... | 1,763 | | | |
| Mobile..... | 160 | | | |
| Savannah..... | 250 | | | |
| Charleston..... | 176 | | | |
| | 90,235 | | | |

Improvements in Working Railways.

[Specification of patent granted to Thomas Thornton, of Birmingham, merchant, and James Edward McConnell, of Wolverton, Buckinghamshire, engineer, for improvements in steam engines, and in the means of retarding engines and carriages on railways, and in connecting railway carriages or wagons together; also improvements in effecting a communication between one part of a railway train and another, by signals or otherwise.]

These improvements consist, in the first place, in forming the piston of packet rings, having conical interior surfaces, and causing the surfaces of other rings—also made conical, but in a reverse direction—to act against them. Elastic metallic discs rest upon ledges, made at the inner sides of the same—spiral springs being interposed between such discs, and pressing them outwards; thus the conical surfaces of the second named rings press against the interior conical surfaces of the first named or packing rings, and close contact with the sides of the cylinder is thereby maintained.

These improvements consist also in a novel arrangement of steam engine chimneys and blast pipes. To increase the draft in the chimney, without adding to its height, it is proposed to form in the chimney of the locomotive engine several shafts, and to have the like number of blast pipes in the exhaust pipe, so that there shall be provided a blast pipe for each shaft of the chimney.

These improvements further consist in a novel arrangement of the education passages, effected by forming an additional opening in each passage, with a valve fitting such opening, each end of such valve being fixed on the spindle of the steam valve; immediately opposite the additional openings, at the other side of the valve chamber, are other orifices, which, upon the alternate uncovering of such additional openings, allow the steam to pass from the cylinder to the chimney—thus facilitating its escape and effecting the reduction of back pressure on the piston.

These improvements further consist in attaching the buffers to the axles, instead of attaching them in the usual manner, or they be suspended in a frame connected to the axles—thus bringing all the buffers into the same horizontal right line; and such buffers are to be formed hollow, containing a chain that extends from the engine to the carriage, where the

guard is seated. Upon a pulley, keyed on the axle of a friction wheel, each end of this chain is wound: and, upon bringing down such friction wheel upon the periphery of the running wheel, the same will make a revolution with the pulley, whereon the chain will be wound, and a signal communicated to the guard—thus affording a complete plan of signalling between that functionary and the engine driver; and, further, the said chain, being caused to act upon the brakes through the medium of toothed gearing, the retarding of the progress of the train will be effected simultaneously with the operation of signalling.

These improvements likewise consist in a novel mode of coupling, which will allow the carriages of a train to be coupled together from the side of a carriage; this is effected by having a rod passed through the centre of the coupling hook, such rod having a handle at each end, and there is keyed upon this rod a coupling loop, with the hook between its ends, and by this means it can be attached to, or detached from, the front, or hinder carriage, as may be necessary. The rod for bringing back the buffers is worked by mitre and bevel wheels, driven from the side of the carriages. By the adoption of this mode of coupling, the necessity of the railway attendant going in between the railway carriages, in order to couple them together, is done away with, thus preventing the occurrence of any of those horrible accidents that have ere now occurred to railway attendants, while thus employed. The patent right is claimed for the invention substantially as above described.—*London Mining Journal*.

From the Detroit Free Press.

Lake Superior Country and Mines.

We extract the following from a letter written by Gen. E. J. Roberts, U. S. Mineral Agent, received by the last mail, and dated Lake Superior, Jan. 1st, 1849.

We are at present working at the Ontonagon, the Minnesota, the Ohio Trap Rock, and the Ontonagon Companies; and on Point Keewawinona, the Cliff, North American Copper Falls, and Lac La Belle Companies. In the Iron District, the Jackson Company. To give you a more definite idea of what is going on, I had, perhaps, better speak of them separately.

The Minnesota Company.—S. O. Knapp, Esq., Agent, has just finished the erection of building, and commenced mining with great vigor and much success—working from 30 to 40 men, and raising native copper in the mass and in the Rock. This is on the lease known as 78, and the discoveries thus far prove very rich.

The Ohio Trap Rock Company.—Wm. Stephens, Agent, is working from 20 to 30 men, and making good returns of native copper in the Rock.

The Ontonagon Company.—Colonel Cushman, Agent, has several men driving on a new vein, but raising no copper as yet. Col. Cushman himself has been obliged to go East on account of his health.

The North American.—Judge Bacon, Agent, is driving his work with increased energy, and greatly improved prospects. Is working 43 men, including 23 miners. The main shaft is down 155 feet, and he is sinking it 60 feet deeper. Also, an air shaft and winze is down 155 feet. Opened on the lode at the 96 foot level, a drift 220 feet; and on the lode at the 155 foot level, a drift 135 feet. Vein grows richer as he goes deeper. Will erect his engine and put his stamps in motion during the winter and spring, and haul copper to the landing for shipping.

Copper Falls.—Joshua Childs, Esq., Agent. This company have a force of 45 men, including 26 miners; and their prospects perhaps were never more flattering than at this time, there having been a decided improvement in the appearance of the mine within the last few weeks. With the force now employed, they will probably be able in the course of the winter, to arrive at some definite conclusion as to the ultimate value of the mine. At a depth of about 85 feet from the surface, at the upper or most southern shaft, they have met with a belt of sandstone which will not vary much from fifty feet in thickness, below which it was thought by some professedly learned in Geology and Mineralogy, that the vein would not extend. Up to this time the sandstone has been penetrated to a depth of about fifteen feet, through which the vein has continued uninterrupted, carrying small sheets of copper, thus

proving almost conclusively that the vein will extend into the trap formation below.

Lac La Belle Mining Company.—S. Mandelbam, Esq., Agent. This company is progressing with its work, but we await the arrival of the Agent from the East before we shall visit it. He was unfortunately detained by the close of the navigation.

The Cliff Mine.—Levi Hanna, Esq., Agent. This giant of mines will be better understood by mining men by entering into a somewhat minute account. The length of this drill No. 1 shaft north is 53 fathoms—no work doing on it. No. 2 drift from No. 1 shaft north, 59 fathoms—no work doing. These two drifts are both driven north of the cross course which separates in the Amygdaloidal and greenstone trap, a short distance, but no copper found. No. 3 drift south of No. 1 shaft, 9 fathoms—no work, and north of No. 1 shaft, 64 fathoms, being in all 73 fathoms long. North of No. 3 shaft in this drift, six men are at work cutting copper. There are about 50 tons at this point averaging 18 inches in width of masses. Six men are stopping north of this. The lode being 18 inches wide, consisting of stamps and barrel work—and four men are driving north, the lode 18 inches wide, principally stamp work. No. 4 drift, south of No. 1 shaft, 26 fathoms, and north of No. 1 shaft, 45 fathoms—in all 71 fathoms long. Twenty-five fathoms south of No. 1 shaft, in this drift, four men are sinking a winze down to No. 5 drift. The lode in the winze at present, 8 feet down, is in a disordered state. North of No. 1 shaft, is this drift, 54 men are stopping. The lode is 15 inches wide, principally barrel and stamp work. North of this between No. 2 and No. 3 shafts, fourteen men are stopping. The lode on an average is two feet wide, consisting of masses, barrel and stamp work. There are about six tons of copper lying here ready to be cut up. North of No. 3 shaft 4 fathoms, four men are driving north. The lode is 18 inches wide, principally stamp work, in a disordered state. They are about sinking No. 2 shaft down to No. 5 drift. No. 5 drift, south of No. 1 shaft, 3 fathoms, the lode is two feet wide in masses barrel and stamp work. There appears to be a splice here dipping north and downward, a very strong appearance. North of this shaft, 4 fathoms, the lode is in a disordered state though there is a strong lode overhead, which they think will make into the drift. At three fathoms distance there is rather more stamp work coming out at present in the masses, but they cannot tell how long this will remain, as the ground is changeable. The mine looks well at present, but we cannot see far into it nor comprehend its value. They have now at the Lake shore about 200 tons of copper ready to ship, and are taking down from 15 to 20 tons per week, and are stamping about 6 tons per week, of from 8 to 10 per cent ore. They work in all about 150 men.

The Jackson Mining Company.—Iron District—

are operating with great success, and are daily sending teams with iron to the Lake for shipment. As a general calculation all the companies working are more than realising their estimated success.

In relation to the adoptedness of this section for farming, the letter says:

No where is the soil more rich or better adapted to yield its fruits in abundance, than we have here, on the Ontonagon, at L'Ance, Portage Lake, and in various other sections. On Point Keewawinona, even are whole townships of the handsomest farming land in the world, timbered with sugar maple, interspersed here and there with splendid pines and broad oak, and lying within a few miles of the Cliff, North American, Albion, Copper Falls, Lac La Belle and other copper mines. And here grow richer and sweeter, and yield in greater abundance to the acre than in the Lower Peninsula or in Western New York, potatoes, ruta-bagas, turnips, cabbages, beans, parsnips, and all sorts of roots; and we have seen wheat grown on the bluffs, in the neighborhood most bleak and barren, surrounding the Cliff Mines, heads nine inches in length, filled with the plumpest berry. Oats, also, turned out a remarkable yield on the location of the Suffolk Company, the last season, and there is no reasonable argument why all sorts of grain, excepting perhaps corn, should not succeed as well, if not better, in this country than in any other. Cattle, too, turned out in the spring fat sooner than elsewhere; and we have eat of mutton fattened on the commons, in the neighbor-

hood of Agate Harbor, equal to any served up in any portion of the world we have ever visited. It is true that we have long winters and deep snows, but then we have neither frosts in the fall or spring seasons, and luxurious growing weather, for the balance of the year. At several of the mining Companies, where they have made sufficient advance to raise more potatoes and other roots than they have occasion for, during the winter, they leave them in the ground until spring, when, on raising them from their hills or beds, they are found sweeter and every way improved. But miners are neither farmers nor horticulturists.

AMERICAN RAILROAD JOURNAL.

Saturday, March 17, 1940.

Explosion of Locomotive Engines.

Some four or five years ago, an explosion of the Locomotive Engine, *Richmond*, took place on the Reading Railroad, which excited the liveliest interest among all persons connected in any way with railroads, and led to a careful inquiry by scientific men as to the cause of the catastrophe.

Dr. Lardner, at the request of the builders of the *Richmond*, gave an elaborate report on the subject, which was published in pamphlet form, and extensively circulated. The explosion, in that instance, took place in the time of a terrific storm. The violence of the explosion was such as to scatter all its working parts, bending them into every variety of form, and throwing a portion of the engine, weighing ten tons, more than eighty yards distant.

Dr. Lardner came to the conclusion, from such facts as could be ascertained, that the catastrophe was produced by the "combined agency of atmospheric electricity and steam." The cylinders being in full operation, and the safety valves free, it could only be caused, he said, "by an almost instantaneous solution of a great volume of highly elastic fluid in the boiler—so great a volume, that, compared with it, the steam escaping through the cylinders and valves would be as nothing," and he supposed that this increased volume of steam was caused by the additional heat communicated by the lightning.

This report of Dr. Lardner did not give general satisfaction to the minds of practical men, who regarded the effect as produced by the ordinary action of steam when the boilers are over heated. The Franklin Institute subsequently took up the inquiry. A committee of the Institute made an elaborate report, reviewing carefully all the facts ascertained, and came to the conclusion that the explosion was caused by an insufficient supply of water in the boiler. That one of the pumps being out of order, the water in the boiler was exhausted—so that it became overheated, and the engine driver then threw in suddenly such a mass of water from the other pump, as to cause a sudden rise of it over the overheated crown plate of the fire box, which caused an instantaneous explosion.

On the first day of February last a similar explosion took place upon the Boston and Providence railroad, by which the engine driver was instantly killed, a brief account of which was published in this Journal under date of February 3.

Great anxiety was again felt to ascertain the cause of this terrific accident, by every man who had any knowledge upon the subject of railways. In this case, the train was going at the rate of 30 miles an hour. As in the case of the *Richmond*, the explosion took place during the night time, and the only person who could give any satisfactory account of the condition of the boiler was killed, and the testimony of the fireman by no means intelligent or satisfactory.

Under these circumstances a committee of exper-

rienced engine builders in New England was called upon to enquire into, and report upon the facts of the case. Their report is as follows:

EXAMINATION INTO THE RECENT EXPLOSION ON THE PROVIDENCE RAILROAD.

The subscribers having been requested to make examination of the Locomotive boiler recently exploded on the Boston and Providence Railroad, with a view to the statement of the facts in the case, for the satisfaction of the public, and having made examination accordingly, offer the following report as the result of their examination and inquiries on the subject.

The explosion took place on the Viaduct in Centon on the 1st inst., at about 5½ o'clock A. M.; it being dark and stormy at the time.

From all we were able to learn of Mr. Cummings who was running the Engine at the time of the accident, and who lost his life thereby, the subscribers judge him to have been entitled to be called a good Engineer.

Mr. Griggs who has the chief superintendence of all the machinery on the Providence Road, we know personally, and regard him as being a very excellent man for the place which he occupies.

The construction of the boiler was substantially that which is common to other locomotive boilers; and its material, workmanship, and proportions were all sufficiently good. And it was provided with two safety valves, two and a half inches diameter each; but the fire box was not provided with a fusible safety plug; and it is understood that means of safety is not much used.

The pressure upon the safety valves at the time of the explosion we had no means of ascertaining with certainty, but were informed that they were set at ninety pounds per square inch, a pressure which was probably not equal to one fourth of the strength of the boiler. The part which was thrown off was rent into several fragments, and consisted of the whole of the cylindrical part immediately over the fire box; it being torn off by a rent through the solid iron all around where it joined the waist, and the end plate of the boiler, and also across the sides somewhat lower down than the top of the fire box.

George Lingham, Fireman, informed us that he was very near to the Engine when the explosion took place; but was in a stooping position, a circumstance which probably saved his life. Lingham also informed us that, about two or three minutes before the explosion took place, Cummings ordered him to shut off the pump, which he did; that Cummings then took down the lantern; tried his upper gauge-cock, and drew water from it, that at the time being running down a descending grade, they were working no steam through the cylinders; that he is not sure that the steam was blowing off at the safety valves at the moment of the explosion, but knows that it was blowing off about two minutes before; that when he recovered the use of his senses, after the explosion, he found that much water had been thrown upon him, though he was not scalded excepting on one side of the face, which was somewhat scalded or burned.

Thus it appears from Lingham's statement, that Cummings used the ordinary means for ascertaining whether, or not, there was sufficient water in the boiler at the time, and that he had the ordinary evidence that there was, viz: the issuing of water from the gauge-cock.

This circumstance, together with that of Lingham's having his clothes wet, constitute all the evidence that we could obtain of there having been water in the boiler at the time of the explosion. With regard to the trial at the gauge-cock, it may be remarked—1st. that the trial might have been too short in duration; 2d. that the heat among the tubes might have been such as to keep most too small a quantity of water among them, by an extremely rapid generation of steam, while it was high enough to reach the gauge-cocks in other parts of the boiler; and 3d. that a small quantity of water might have filled the boiler with foam. It was possible for Mr. Cummings to have been deceived in either of these ways, and therefore the evidence to be drawn from the trial of the gauge-cock, as stated, can have but little weight against the more certain evidence to be drawn from the appearance of the boiler.

As to the wetting of the fireman, it seems quite clear, that, if the water which saturated his outside

coat had come from the boiler, he would have been scalded in other parts of the body besides his face.—It is most reasonable, therefore, to conclude that the water which wet him came from another source; probably from the tender, from which it might have been ejected by the great concussion which must have taken place in consequence of the explosion.—The subscribers are of opinion that the fireman was not scalded but burned. The evidence going to show that there was very little, if any unconverted water in the boiler at the time of the explosion, consists of the following, viz:—

1st. The tubes, and nearly the whole extent of both of the tube plates, are somewhat sealed, an effect never to be observed on the surface of boilers except after an exposure to nearly a red heat.

2d. The wooden casing is much charred, and burned entirely around the boiler; underneath even, as well as on the top and sides. These effects, required a temperature far above what could have been produced, under the circumstances, with unconverted water in the boiler. The subscribers, therefore, deeming the evidence in the case to be clear that, there was very little, if any, water in the boiler at the moment of the accident, give it as their mature opinion that the explosion took place from over heating the boiler in consequence of a want of water.

Isaac Adams, Holmes Hinkley, Gardner P. Drury, Jabez Coney, Lewis Kirk, Wilson Eddy, John B Winslow, Seth Adams.

The facts elicited in the case as stated in the report of this committee, throw much light upon the case of the *Richmond*. They leave no doubt upon our mind that the cause of the explosion in both the cases was the same, and that the conclusions of toe committee will be regarded as entirely satisfactory.

The impression which has to some extent prevailed among the builders of locomotives, that steam could not be generated so as to cause an explosion when the action of the cylinders was free, and the valves open, seems now to be erroneous, and that *steam safety plugs* should in all cases be inserted. In fact it would appear that the cause of the explosion of locomotive boilers is as easily explained as the burning out of a chimney, notwithstanding the apparent mystery thrown over the affair whenever such a catastrophe occurs.

We commend this subject to the careful consideration of Railroad Directors, Engineers and Superintendents. The rapid increase of new projects for railroads—the haste in opening new lines—the urgent demands upon the builders of locomotives, all conspire toward the introduction of imperfect and unsuitable equipment upon our railroads. The demand, too, for high speed in running ordinary trains, is altogether beyond the capacity of our railroads to bear. The very best finished engines are for this cause liable to be constantly thrown out of adjustment, and serious casualties to occur. We shall resume this subject at our earliest leisure.

Central (Ga.) Railroad and Banking Co.

The adjourned meeting of stockholders, for considering the question of aid to the Nashville and Chattanooga railroad, will be held at Savannah on the first Tuesday of April next, in obedience to a resolution of the stockholders at the last annual meeting.

The annexed resolutions are published in conformity to a vote of the Directors on this day.

R. R. CUYLER, President.

Savannah, March 3, 1849.

Whereas no reply has been received by the President to his letter to Mr. Stephenson, President of the Nashville and Chattanooga railroad, and as the time prescribed by vote of the stockholders anterior to the call of the adjourned meeting, is about to expire.

Resolved, That the President do cause to be published a notice of the meeting of stockholders, to be held on the first Tuesday in April, stating that the meeting is for considering the question of aid to the Nashville and Chattanooga road.

Resolved, That considering the recent heavy engagements of this company for iron, it is deemed inexpedient at this time to grant the aid referred to, and that the letter of the President of this company to the President of the Nashville road on the subject be published.

Central Railroad and Banking Co.,
Savannah, February 12, 1849.

V. K. STEVENSON, Esq., President, Nashville.

Dear Sir: I feel it my duty to inform you of what is most evident in this quarter—a determination on the part of a great majority of our stockholders to decline extending the aid which the board of directors first thought they would give. Many warm friends of your enterprise when you were here, have been to me to say, that the engagements of the company—extending to the purchase of over 5,000 tons of rails—utterly preclude all aid to you for the present. I am satisfied that if your application is presented in April, the majority against it will be very large. I ask you under these circumstances to withdraw the application. Perhaps at a future day circumstances may occur, which might induce the aid now withheld from necessity, and not from any want of interest in your road.

I believe all persons here sincerely desire your success.

With esteem, dear sir, your obedient servant,

R. R. CUYLER, President.

Railroad Matters in Maine.

Portland, Maine, with a population of 16,000 only, four years ago, went boldly at work to construct a railway to Montreal, and after raising one million of dollars, and putting about 50 miles of the distance under contract, took the lead in pushing a line of railway (embranching from her main stem, 27 miles from Portland) in the direction of Bangor, 135 miles from Portland. Both of these enterprises are now in successful progress, are over 40 miles in actual operation, and over 100 miles, taking both directions, will be finished during the present year.

The effect of these movements upon the business of Portland, has been immensely great—almost extraordinary. Her foreign commerce in 1848 was more than double the amount of 1847, her population is now increased to more than 20,000, and the business of the past winter has far surpassed the most sanguine anticipations of the friends of the Railroad.

We see by the Portland papers that the business upon the Railroad going east of the city, is far greater than that going west, in the direction of Boston. The Railroad is attracting to the city of Portland the business of the interior of Maine, which has heretofore been divided between several towns on the Kennebec and the Penobscot waters.

This fact is arousing the enterprising people of Bangor to similar exertions; and without a railway to the Kennebec, Bangor (now containing a population of 15,000) cannot retain her position, or her present population.

A very intelligent citizen of Bangor is presenting the matter to the consideration of her people, and we give below a portion of an article from his pen, taken from the Portland Enquirer:

BANGOR—ITS POSITION, INTERESTS, PROSPECTS AND DANGERS.

As preliminary to the subject of manufactures and improved agriculture, we now devote a number or two to the subject of a Railroad from Bangor to Waterville. We have already given a skeleton

view of its importance. Since we wrote those articles—only a few weeks ago—the evidence of the truth of those views has been more strangely forced upon us. It would seem that a Railroad from Portland to Lewiston—hardly within hearing of us—has struck a heavy blow to our important interior trade. The country produce has almost deserted our market. Prices are high, and the demand great; but the supply has reversed its ordinary channels. It comes to us, indeed, but it comes from commission merchants abroad, not from the people in the country. And yet we have hardly begun to feel the effects of that road. It will soon be completed to Waterville, and strike the vitals of our country trade. We learned from the best authority, several years ago, that the trade of Dexter, one of the most important inland towns in the State, was inclining towards Waterville, to which place, for a few months in the year, small steamers reach. The moment the Railroad touches Waterville we lose Dexter and all the section beyond, and above. Somerset county has afforded us a large winter trade—that to goes. Franklin used to reach us—that is already gone.

The reason is plain. For higher prices are no temptations when the higher price, and a large part of the value of the commodity, is sunk in the expense of transportation. A man has a half ton of pork to market. In Bangor, we will suppose, he can get \$8 per cwt.—at Waterville, or any other depot along the line, he gets \$7. Will he make a speculation to run his pork to Bangor for the additional \$10? But a large portion of the raisers of pork do not calculate on marketing over from 300 to 500 lbs. per year. To them the difference is greater. We take this as an estimate; the same is true of butter, cheese, apples, corn, wheat, oats—to say nothing of potatoes and hay, which from their weight or bulk of carriage have been ever beyond the range of our market from the western interior, but which would be at our command with a railroad.

These articles we want—and pay such prices for, as will secure them to us if our facilities of transportation are equal to those which reach other markets. Are we ready to surrender them? Can we do it without reducing ourselves to humiliating dependence on other markets? Shall we send out our lumber merely to purchase supplies, expending our profits on commission to Portland and Boston Wholesale Grocers?

Manufacture, indeed! under such circumstances! Who comes to exchange pork for clothes or shoes? Are we to compete with Lowell, Manchester, Lynn, &c., in the trade of the world, while we leave our own State to seek its supplies from the west? Or are we to send out pedlar wagons to pick up trade, while our supplies and stock are to be sought where commissions are to be paid? Manufactories are not thus to be raised up.

We know it is said Lowell was started while no railroad reached it. Yes—but where was competition then? Railroads were nowhere—and comparatively cotton manufactures were not in this country. But is any one green enough to suppose that the Lawrences would now think of starting a Lowell without a railroad?

Five years ago to have started manufactories here without a Railroad would have been sane. But to start them now, without that facility, for interior communication, while a Railroad opens such an amount of water power so near as to rob us of our interior trade, would be a madness for which 1835 furnished no precedent.

We have said already, and repeat it, that with a Railroad hence to Waterville, no water power in the State stands in the way of ours. From causes which will not soon lose their force, prices here will continue to secure us the interior trade, facilities for that trade being equal on our part. So far from disparaging the importance of manufactures, we urge upon our citizens most earnestly to secure the advantages, on this behalf which God and nature have given us, by aiding those advantages to a healthful development through the improvements of art and science in our power, and which are brought into competition with our natural advantages by our fellow citizens in the western part of the State. Will we surrender?—or will we show them that it takes an early riser to catch us napping?

Under similar impressions the towns on the Kennebec are pushing on, with all vigor, their line of

Railway from North Yarmouth to Bath and Augusta.

Architectural Improvements.

Several unsightly buildings, lying south of Hari's Hotel in Burlington, are in progress of removal to make room for the erection of a splendid and commodious Railway Depot for the Burlington and Rutland Railroad Company. The Board of Direction have very judiciously secured the services of Ammi B. Young, Esq., of Boston, the eminent Architect, who left Burlington on the morning of the 2d inst., after making preparations for the immediate execution of designs for depots in Burlington, Rutland and Bellows Falls, and for depots and station-houses on the line of the road.

The Board of Direction undoubtedly feel it to be their bounden duty to erect tasteful, as well as convenient, buildings for the benefit of their company. Besides, the public has always a right to demand that the exterior of all buildings, public or private, and the exterior and interior of public edifices shall be in good taste. Thereby the people have, constantly before their vision, lasting memorials of architectural beauty, and are induced to imitate, when occasions occur, the various excellencies and conveniences which, after years of study and labor, the architect has planned and perfected.

Throughout New England, a very great improvement in the style of private residences and public buildings has been visible during the last fifteen years. It is perceptible in Burlington, Montpelier, and in fact every where; and this advancement in architectural taste is chiefly owing to the services of Mr. Young, who designed the State House in Montpelier, the splendid Custom House in Boston, and the capacious depot in Northfield, as well as numerous other edifices of rare architectural beauty which it is now unnecessary to enumerate.

The influence, the moral influence, of such monuments of good taste is more powerful and lasting than can be imagined. We take pleasure in chronicling the truth that Vermont is making great advancement in this particular, and with the aid of the several Railroad Companies in the State, will, from time to time, exhibit evidences of good taste, which must reflect credit upon the architect as well as upon those who are benefited by his services.—*Burlington (Vt.) Free Press, March 2, 1849.*

The foregoing suggestions, and the facts therein stated, are full of interest and importance. While we would decry all needless expense in the way of ornament for Railway depots, station-houses, workshops, or other structures, we know of no branch of mechanics where taste and good judgment are so requisite. The Railway is no longer an experiment, but an established truth—an ultimate fact. It can never be superseded by any other agency whatever. With this fact before them, Railroad Directors & Engineers should aim at once at permanence and perfection. Symmetry of proportion, and strength of finish, should be the aim in the execution of everything connected with a Railroad.

We are most happy to be able to bear testimony to the truth of the remarks of the accomplished editor of the *Free Press*, in regard to the elegant and capacious depot and workshops at Northfield, erected by the Central Railroad Company. They seem in good taste with the splendid attractions afforded to the traveller in the shifting and varied scenery witnessed in passing from the Connecticut Valley across the summit of the Green Mountain Ridge. We never enjoyed any ride more.

We hope, before the present year shall close, to be able to witness the fact, that the lines of railway in Vermont are so connected, that the man of business can follow the Connecticut valley by railway, from this city, to the mouth of the White River, thence across to Burlington, in the valley of the latter stream, and the Winoski, to Lake Champlain—thence in the valley of Otter Creek, to Rutland, and thence to Whitehall and Saratoga, between which and New York the lines are already connected.

ENGINEERS.

Arms, F. C.,
Georgia Railroad, Augusta, Ga.

Arrowsmith, A. T.,
Buckfield Branch Railroad, Buckfield, Me.

Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Crocker, Wm. B.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Ford, James K.,
New York.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. P.,
Rutland and Burlington Railroad, Rutland, Vt.

Garnett, C. F. M.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Holcomb, F. P.,
Southwestern Railroad, Macon, Ga.

Higgins, B.,
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.,
New York and Boston Railroad, Middletown Ct.

Jones C. F.,
South Oyster Bay, L. I.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

Minot, Charles,
Boston and Maine Railroad, Boston, Mass.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston.

Nicolls, G. A.,
Philadelphia and Reading Railroad, Reading, Pa.

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Robinson, James P.,
Aandroscegin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Trimble, Isaac H.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukee, Wisconsin.

BUSINESS CARDS.

James Laurie, Civil Engineer,
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.
Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

IRON.

Railroad Iron.
THE NEW JERSEY IRON CO'S WORKS AT
Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to
DUDLEY B. FULLER, Agent,
139 Greenwich street.
New York, October 25, 1848.

Railroad Iron.
THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.
THOMAS B. SANDS & CO.,
22 South William street,
New York.
February 3, 1848.

Railroad Iron, Pig Iron, &c.
600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2 1/2 by 1/2 Flat Bars.
25 Tons of 2 1/2 by 9-16 Flat Bars.
100 Tons No. 1 Gartsbrorie.
100 Tons Welsh Forge Pigs.
For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., Philadelphia.

Railroad Iron.
THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to
COOPER & HEWITT, Agents.
17 Burling Slip, New York.
October 30, 1848.

Railroad Iron.
THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President -
Mount Savage Iron Works, Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

RAILROAD IRON & LOCOMOTIVE TYRES
imported to order, and constantly on hand, by
A. & G. RALSTON,
4 South Front St., Philadelphia.

Railroad Spikes and Wrought Iron Fastenings.
THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.
Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.
All orders addressed to the Agent at the Factory will receive immediate attention.
P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by
A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

T. & C. Wason,

MANUFACTURERS OF EVERY STYLE OF
Freight and Baggage Cars—Forty rods east of the depot Springfield, Mass.
Running parts in sets complete. Wheels, axles, or any part of cars furnished and fitted up at short notice and in the best manner.
N. B. Particular attention paid to the manufacture of the most improved Freight Cars. We refer to the New Haven, Hartford and Springfield; Connecticut River; Harlem; Housatonic, and Western, Massachusetts, Railroads, where our cars are now in constant use.

SCHENECTADY LOCOMOTIVE WORKS,
SCHENECTADY, N. Y.
THE undersigned is prepared to execute orders for Locomotive Steam Engines and Tenders; and from long experience in building, can furnish machines of most superior workmanship. The Works are very large, and conveniently situated near the line of Railroad leading to Buffalo, and can furnish Locomotive Tenders and Railroad Machinery at short notice.
E. S. NORRIS.
February 24, 1849.

Mattewan Machine Works.
THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for Locomotive Engines of every size and pattern—also Tenders, Wheels, Axles, and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.
STATIONARY ENGINES, BOILERS, ETC.,
Of any required size or pattern, arranged for driving Cotton, Woollen, or other Mills, can be had on favorable terms, and at short notice.
COTTON AND WOOLLEN MACHINERY,
Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,
Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.
Turning Lathes, Slabbing, Planing, Cutting and Drilling Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fish-kill Landing, or at 39 Pine street, New York.
WM. B. LEONARD, Agent.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round. Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L. Blister Steel.
Best English Blister Steel, etc., etc., etc.
All of which are offered for sale on the most favorable terms by
WM. JESSOP & SONS,
91 John street, New York.
Also by their Agents—
Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

LOCOMOTIVE FOR SALE.
(NOW RUNNING.)
A Good Locomotive Engine and Tender in good running order, for sale low. Address
E. S. NORRIS,
Schenectady Locomotive Works,
Schenectady, N. Y.
February 24, 1849. 4t8

Direct Action Engines FOR STEAMBOATS.

THE PATENT DOUBLE CYLINDERS,

AND ALSO

THE ANNULAR RING PISTON ENGINES, of Messrs. Maudslay, Sons & Field, of London, may be built in the United States, under license, which can be obtained of their agent,

THOMAS PROSSER, C. E.
28 Platt street, New York.

May 6, 1848.

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1 1/4 to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by
IRVING VAN WART,
12 Platt street, New York.

JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

Norwich Car Factory, NORWICH, CONNECTICUT.

At the head of navigation on the River Thames, and on the line of the *Norwich & Worcester Railroad*, established for the manufacture of

RAILROAD CARS,
OF EVERY DESCRIPTION, VIZ:
PASSENGER, FREIGHT AND HAND CARS,
ALSO, VARIOUS KINDS OF
ENGINE TENDERS AND SNOW PLOUGHS.
TRUCKS, WHEELS & AXLES

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

Any communication addressed to

JAMES D. MOWRY,

General Agent,

Norwich, Conn.,

Will meet with immediate attention.

178

CAR MANUFACTORY, CINCINNATI, OHIO.



KECK & DAVENPORT would respectfully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848.

44f

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS

OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished

at short notice; also, STEEL SPRINGS

of various kinds; and

SHAFTING FOR FACTORIES.

The above may be had at order at our Car Factory,

REUEL DEAN,

ELIJAH PACKARD,

ISAAC MILLS,

SPRINGFIELD, MASS.

1748

LAP-WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM 1 1/2 TO 8 INCHES DIAMETER.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,

Patentee.

28 Platt street, New York.

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,

a45 President of the Newcastle Manuf. Co.

TO RAILROAD COMPANIES AND MANUFACTURERS OF RAILROAD MACHINERY. The subscribers have for sale American and English Bar Iron, of all sizes; English Blister, Cast, Shear and Spring Steel; Juniata Rods; Car Axles, made of double refined iron; Sheet and Boiler Iron, cut to pattern; Tires for Locomotive Engines, and other railroad carriage wheels, made from common and double refined B. O. Iron; the latter a very superior article. The Tires are made by Messrs. Baldwin and Whitney, Locomotive Engine Manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,

a45 N. E. cor. 12th and Market sts., Philad., Pa.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS,
Reading, Pa.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, Patterson, N. J. The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tyres; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires. Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N. J., or 60 Wall St., New York.

IRON BRIDGES, BRIDGE & ROOF BOLTS, etc. **STARKS & PRUYN**, of Albany, New York, having at great expense established a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought-Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several Iron Bridges for the Erie Canal, Albany Basin, etc.—and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook,

Nelson J. Beach,

Jacob Hinds,

Willard Smith, Esq.,

Messrs. Stone & Harris,

Mr. Wm. Howe,

Mr. S. Whipple,

January 1, 1849.

Canal Commissioners

of the

State of New York.

Engineer of the Bridges for

the Albany Basin.

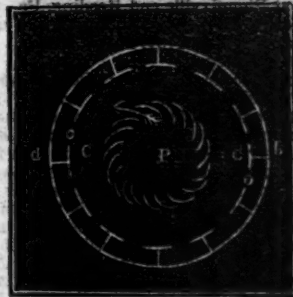
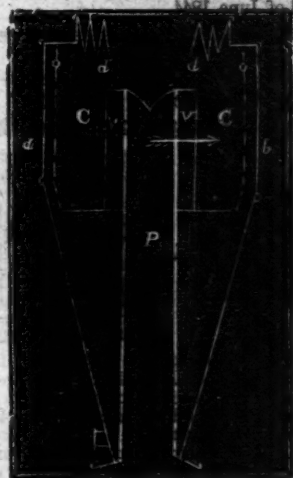
Railroad Bridge Builders,

Springfield, Mass.

Engineer & Bridge Builder,

Utica, N. Y.

FRENCH & BAIRD'S Patent Spark Arrester.



TO THOSE INTERESTED IN RAILROADS.

Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both Passenger and Freight Engines, and have been brought to such a state of perfection, that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust, they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney through a spacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase, or obtain further information in regard to their merits.

R. L. Stevens, president Camden and Amboy railroad company; Rich'd Peters, sup't Georgia railroad, Augusta, Ga.; G. A. Nicolls, sup't Reading railroad, Reading, Pa.; W. E. Morris, pres't Philadelphia, Germantown and Norristown railroad company, Philad.; E. B. Dudley, pres't W. and R. railroad co., Wilmington, N. C.; Col. Jas. Gadsden, pres't S. Carolina railroad co., Charleston, S. C.; W. C. Walker, agent V. and J. railroad, Vicksburg, Miss.; R. S. Van Rensselaer, sup't Hart. and N. H. railroad; W. R. McKee, sup't Lexington and Ohio railroad; T. L. Smith, sup't N. Jersey railroad and transp. co.; J. Elliott, sup't M. P., Philadel. and Wilm. railroad; J. O. Sterns, sup't Elizabethtown and Somerville railroad; R. R. Cuyler, pres't Central railroad, Savannah, Ga.; J. D. Gray, sup't Macon (Ga.) railroad; J. H. Cleveland, sup't of Southern railroad, Monroe, Mich.; M. F. Crittenden, sup't mo. power Central railroad, Detroit, Mich.; G. B. Fisk, pres't Long Island railroad, Brooklyn, L. I.

Orders for these chimneys and arresters, addressed to the subscribers, care of Baldwin and Whitney, of Philadelphia, will be promptly executed.

The subscribers will dispose of single rights, or rights for one or more States on reasonable terms.

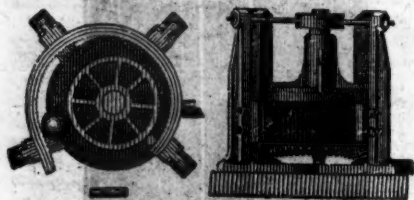
FRENCH & BAIRD.

Philadelphia, Pa., April 6, 1844.

The letters in the figures refer to the article given in the Journal of June, 1844.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shinglers, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

PATENT OIL FOR MACHINERY.—The Subscribers are now prepared to supply "Devlan's Patent Oil" in any quantity; Machinists, Manufacturers, etc., are requested to call and examine the article. Certificates of its efficacy and superiority over all other oils, from several of our most extensive manufacturers are now in our possession.

ALSO,

OIL.—Bleached and Unbleached Winter, Solar, Elephant and Whale Oils; also light colored selected racked Whale Oil, suitable for retailing. For sale by

ALLEN & NEEDLES,

No. 22 and 23 S. Wharves, near Chestnut St., Philadelphia.

February 24, 1849.

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

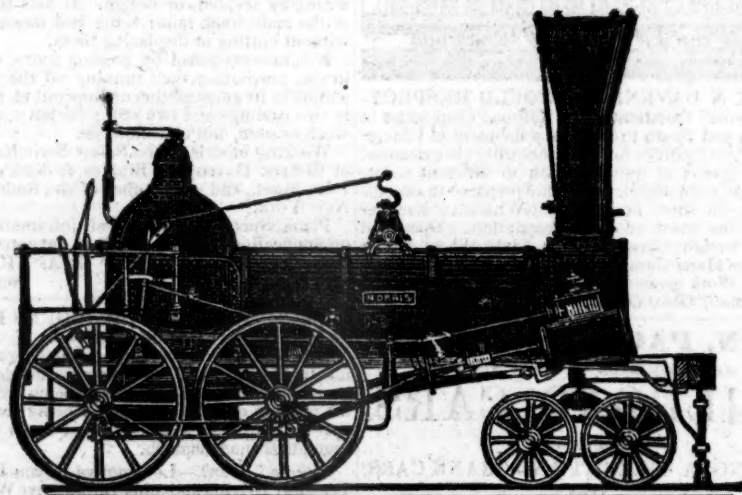
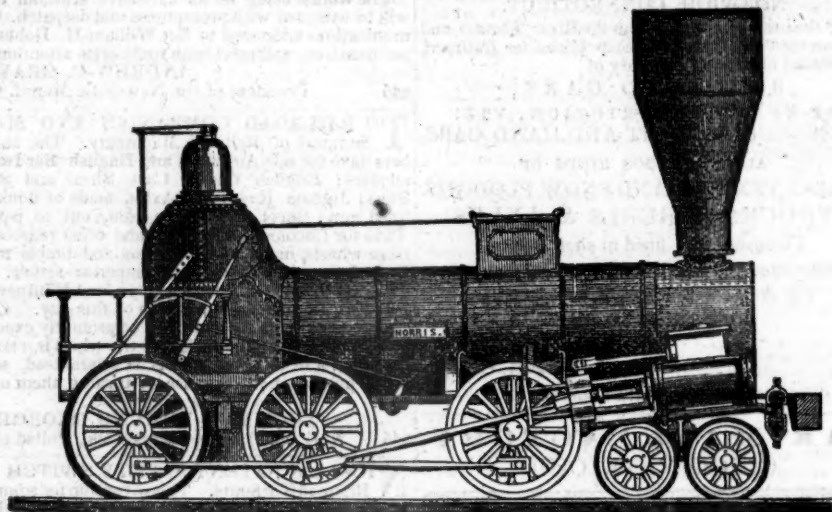
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds—including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

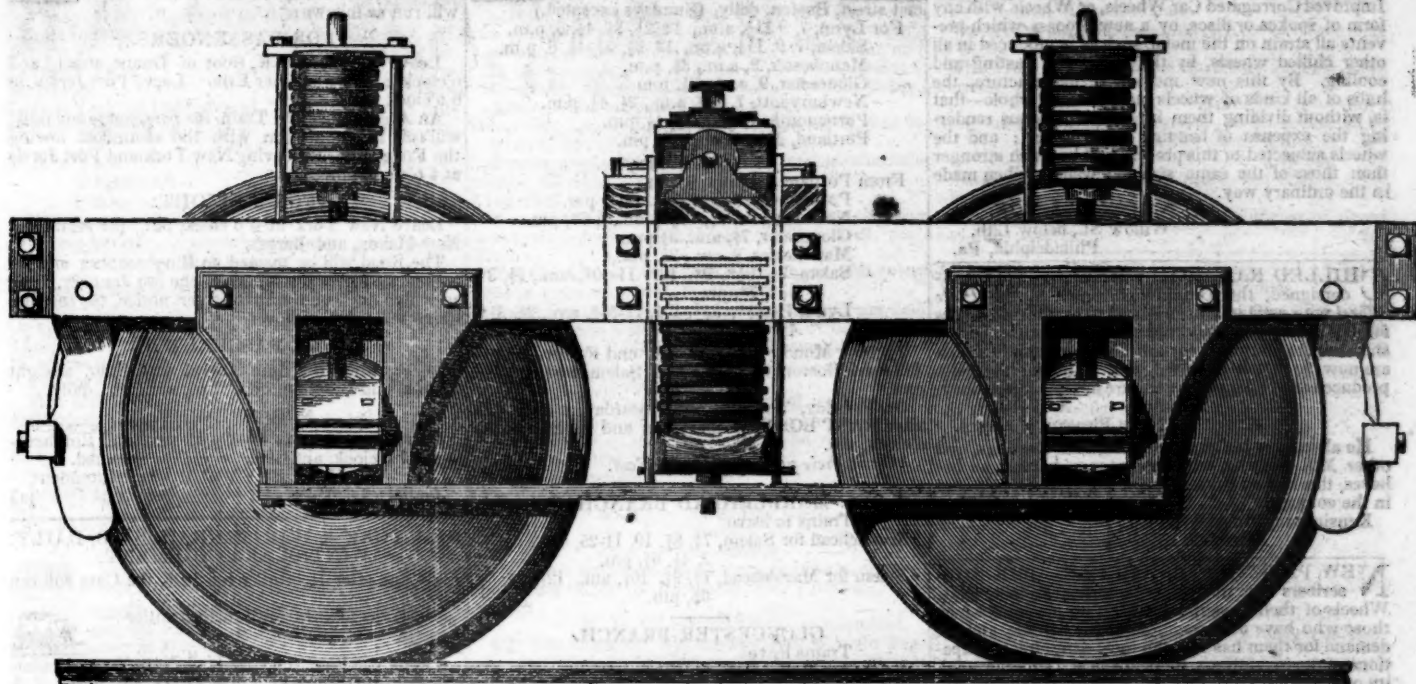
Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS' BROTHERS.

FOWLER N. RAY'S

METALLIC INDIA RUBBER CAR SPRINGS.



THE NEW ENGLAND CAR COMPANY have introduced these Springs, and they are now in operation on every Railroad terminating in Boston, and several others in New England and the Middle States. Their qualities are well understood, or may be readily ascertained by every person interested to know them. They require no recommendation from the Company. The only known compound of India Rubber good for anything for this purpose is the Vulcanized India Rubber, invented by Charles Goodyear, of New Haven, and the application of it, and the form in which it is used, were invented by F. M. Ray, of New York. The right to manufacture and sell the substance itself for the purpose of Railroad Carriage Springs, as well as the form and application of it, are held exclusively by the New England Car Company. No other Company, or individual, has any right to sell or use it for such purpose, or has attempted so to use it in this country.

The New England Car Company guarantee the right to use the article they sell for Railroad Carriage Springs only, against all adverse rights, whether under patents or otherwise; and all persons and corporations are cautioned against a similar use of the article, when purchased of any other parties.

The Springs they sell are all manufactured in a uniform manner, and under the immediate inspection of their own Agent, and have been proved and known to answer the purpose. None have been manufactured in this country or imported from abroad besides their own, which would at all answer the purpose; and if any such should be produced, it cannot be used for Car Springs, while Goodyear's patents, and the right of the New England Car Company under them, remain in force.

The New England Car Company are now prepared to answer orders for all that may be called for, on reasonable notice, and uniform and equitable terms.—They invite the most careful examination, and the severest scrutiny, into the merits of their Springs, wherever they have applied them. And if after such examination, your Company should judge it for their interest to adopt them, the N. E. Car Company would respectfully invite the patronage which they think they deserve, and are confident of receiving at your hands.

EDWARD CRANE, Agent,
Office 99 State-street.
Orders may also be left with WM. RIDER & BROTHERS, No. 58 Liberty-street, New York, or with F. M. RAY, Agent,
100 Broadway, N. Y.

The following article from the pen of Mr. HALE, the President of the Boston and Worcester Railroad, expresses his opinion of this important improvement, as published in the Boston Daily Advertiser of June 7, 1848. He says:

"Of the numerous uses to which the wonderful elasticity and durability of India Rubber renders this material applicable, we are hardly aware of one in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used, not only for the springs on which the car rests, but for the springs attached to the draw bar at each end of the car, to prevent any jar on the sudden advancement or interruption of the motion of the car. For both these purposes it appears to be admirably adapted, and we do not learn, that during the period in which it has been used, any defect in it has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think than any other spring which we have ever seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is simple in its form and application, extremely light, and little liable to get out of repair.—During the period of some months, in which we have seen the springs in operation, there is no apparent wear or diminution of their efficacy."

The above statement of Mr. Hale agrees with my own observation in all particulars.
WM. PARKER, Supt., B. & W. R. R.
June 8, 1848.

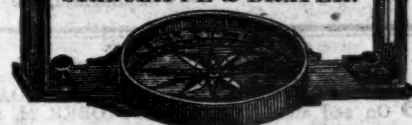
I fully concur in the foregoing statement, from practical observation of its use for the last five months, on the Boston and Worcester railroad corporation cars.
D. N. PICKERING, Jr.,
Supt. Car Building B. & W. R. R.
Boston, June 10, 1848.

The New England Car Company have introduced their Vulcanized India Rubber Car Springs on the roads with which we are respectively connected, and we fully concur with Mr. Hale in the above opinion of their character and properties.
DAVENPORT & BRIDGES, Car Builders.
BRADLEY & RICE, Car Builders.
Boston, June, 1848.

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.
For sale in lots to suit purchasers, in tight papered barrels, by
JOHN W. LAWRENCE,
142 Front-street, New York.

Orders for the above will be received and promptly attended to at this office.

ENGINEERS' AND SURVEYERS' INSTRUMENTS MADE BY EDMUND DRAPER, Surviving partner of STANCLIFFE & DRAPER.



No 23 Pear street, below Walnut, Philadelphia.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to 1 in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T. L. and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by MORRIS, TASKER & MORRIS, Warehouse S. E. Corner of Third & Walnut Streets, PHILADELPHIA.

TO LOCOMOTIVE AND MARINE ENGINE Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine, and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; hollow Pistons for Pumps of Steam Engines etc. Manufactured and for sale by MORRIS, TASKER & MORRIS, Warehouse S. E. corner 3d and Walnut streets, Philadelphia.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WRIGHTMAN, manufacturing Chemists, Philadelphia. Jan. 20, 1849.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UN-derdesigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UN-derdesigned, the Original Inventor of the Plate Wheel with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country.

Kensington, Philadelphia Co.,
March 12, 1848.

NEW PATENT CAR WHEELS.—THE SUB-scribers are now manufacturing Metallic Plate Wheels of their invention, which are pronounced by those who have used them, a superior article, and the demand for them has met the most sanguine anticipations of the inventors. Being made of a superior quality of Charcoal Iron, they are warranted equal to any manufactured.

We would refer Railroad Companies and others to the following roads that have them in use. Hartford and New Haven, Connecticut River, Housatonic, Harlem, Farmington, and Stonington Railroads.

SIZER & CO.,
Springfield, Mass.

RAILROADS.

BOSTON AND PROVIDENCE RAILROAD.

On and after MONDAY, OCTOBER 2d, the

Trains will run as follows:—
Steamboat Train—Leave Boston at 5 pm. Leaves Providence on the arrival of the train from Stonington.

Accommodation Trains—Leave Boston at 8 am., and 3 1/2 pm. Leave Providence at 8 1/2 am., and 3 1/2 pm.

Dedham Trains—Leave Boston at 9 am., 12 m., 3 1/2, 6, and 10 1/2 pm. Leave Dedham at 7 1/2, 10 1/2, am., 1 1/2, 4 1/2, and 9 pm.

Stoughton Trains—Leave Boston at 11 1/2 am., and 4 1/2 pm. Leave Stoughton at 8 1/2 am., and 2 1/2 pm.

Freight Trains—Leave Boston at 11 am., and 5 pm. Leave Providence at 4 am., and 7 40 am.

On and after Wednesday, Nov. 1, the DEDHAM TRAIN will run as follows: Leave Boston at 9 am., 12 m., 3 1/2, and 10 1/2 pm. Leave Dedham at 8, 10 1/2, am., 1 1/2, 4 1/2, and 9 pm.

WM. RAYMOND LEE, Sup't.

NORWICH AND WORCESTER RAILROAD.

Winter Arrangement.—1848.
Accommodation Trains
daily (Sundays excepted.)

Leave Norwich at 6 am., 12 m., and 2 1/2 pm.

Leave Worcester at 6 1/2 and 10 am., and 4 1/2 pm., connecting with the trains of the Boston and Worcester, and Providence and Worcester railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston daily, Sundays excepted, at 5 pm.—At New York from pier No. 1, North River.—At Boston from corner Lincoln and Beach streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6 1/2 am., from Norwich at 7 am.

Fares are Less when paid for Tickets than when paid in the Cars.

S. H. P. LEE, Jr., Sup't.

EASTERN RAILROAD, WINTER ARRANGEMENT.

On and after MONDAY, Oct. 2, 1848,

Trains will leave Eastern Railroad Depot, Eastern Avenue, Commercial-street, Boston, daily, (Sundays excepted.)

For Lynn, 7, 9 11 1/2, a.m., 12, 2 1/2, 3 1/2, 4 1/2, 6, p.m.

Salem, 7, 9, 11 1/2, a.m., 12, 2 1/2, 3 1/2, 4 1/2, 6, p.m.

Manchester, 9, a.m., 3 1/2, p.m.

Gloucester, 9, a.m., 3 1/2, p.m.

Newburyport, 7, 11 1/2, a.m., 2 1/2, 4 1/2, p.m.

Portsmouth, 7, a.m., 2 1/2, 4 1/2, p.m.

Portland, Me., 7, a.m., 2 1/2, p.m.

And for Boston,

From Portland, 7 1/2, a.m., 3, p.m.

Portsmouth, 7, 9 1/2, a.m., 5 1/2, p.m.

Newburyport, 7 1/2, 10 1/2, a.m., 2, 6, p.m.

Gloucester, 7 1/2, a.m., 3 1/2, p.m.

Manchester, 8, a.m., 3 1/2, p.m.

Salem, 7 1/2, 8 1/2, 9, 10 1/2, 11-40, a.m., 2 1/2, 3, 4 1/2, 7, p.m.

Lynn, 7 1/2, 8 1/2, 9 1/2, 10 1/2, 11-55, a.m., 2 1/2, 3 1/2, 4 1/2, 7 1/2, p.m.

On Monday, Wednesday, and Friday, a train will leave Boston for Lynn and Salem, at 7 o'clock; p.m.

On Tuesday, Thursday, and Saturday, a train will leave EAST BOSTON for Lynn and Salem, at 10 1/2 o'clock, p.m.

* Or on their arrival from the East.

MARBLEHEAD BRANCH.

Trains to leave

Marblehead for Salem, 7 1/2, 8 1/2, 10, 11-25, am.

2, 4 1/2, 6 1/2, pm.

Salem for Marblehead, 7 1/2, 9 1/2, 10 1/2, am., 12 1/2, 3 1/2, 5 1/2, 6 1/2, pm.

GLOUCESTER BRANCH.

Trains leave

Salem for Manchester at 9 1/2, am., 4 1/2, pm.

Salem for Gloucester at 9 1/2, am., 4 1/2, pm.

Trains leave

Gloucester for Salem at 7 1/2, am., 3 1/2, pm.

Manchester for Salem at 8, am., 3 1/2, pm.

Freight Trains each way daily. Office 1 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

ESSEX RAILROAD—SALEM to LAWRENCE,

through Danvers, New Mills, North Danvers,

Middleton, and North Andover.

On and after Monday, Oct. 2, 1848,

trains leave daily (Sundays excepted,) Eastern Railroad Depot, Washington-st.

Salem for South Danvers at 7 45, 9, am., 12 45, 3 15, 6 45, pm.

Salem for North Danvers at 7 45, 9, am., 12 45, 3 15, pm.

Salem for Lawrence, 9, am., 3 15, pm.

Danvers " 9 10, am., 3 15, pm.

North Danvers " 9 20, am., 3 35, pm.

Middleton " 9 30, am., 3 45, pm.

North Andover " 10, am., 4 20, pm.

South Danvers for Salem at 7 45, 8 45, 11 30, am., 2 45, 5, pm.

North Danvers " 8 20, 11 10, am., 1 40, 5 40, pm.

Middleton " 11, am., 4 30, pm.

North Andover " 10 35, am., 5 05, pm.

Lawrence " 10 30, am., 5, pm.

* These trains will not stop at Frye's Mills nor Grove-st.

JOHN KINSMAN, Superintendent.

Salem, Oct. 2, 1848.

BOSTON AND MAINE RAILROAD.

Winter Arrangement.

Commencing Nov. 13, 1848

Trains leave Boston as follows, viz.: For

Portland at 7 am. and 2 1/2 pm.

Great Falls at 7 am., 2 1/2 and 3 1/2 pm.

Haverhill at 7 and 11 1/2 am., 2 1/2, 3 1/2 and 5 pm.

Lawrence at 7, 9, 11 1/2 am., 2 1/2, 3 1/2, 5, 6 pm.

Reading, 7, 9 & 11 1/2 am., 1 1/2, 3 1/2, 5, 6, 7 1/2 & 10 pm.

Trains leave for Boston as follows, viz.: From

Portland at 7 1/2 am., and 3 pm.

Great Falls at 6 1/2 and 9 1/2 am., and 4 1/2 pm.

Haverhill at 7, 8 1/2 and 11 am., 3 and 6 1/2 pm.

Lawrence at 6 1/2, 7 1/2, 8 1/2, 11 1/2 am., 12 1/2, 3 1/2, 6 1/2 pm.

Reading at 6 1/2, 7 1/2, 9 1/2, 11 1/2 am., 1 1/2, 3 1/2, 7 1/2, 9 pm.

MEDFORD BRANCH TRAINS.

From Medford at 6 1/2, 8, 10 1/2 am., 2, 4, 6, 9, pm.

From Boston at 7 1/2, 9 1/2 am., 12 1/2, 2 1/2, 5 1/2, 6 1/2, 10 pm.

The Depot in Boston is on Haymarket Square.

CHAS. MINOT, Super't.

Boston, Nov. 7, 1848.

NEW YORK AND ERIE RAILROAD.

WINTER ARRANGEMENT.

On Monday, January 1st, and

until further notice, the trains

will run as follows:

FOR PASSENGERS.

Leave NEW YORK, (foot of Duane street,) at 7

o'clock, am., by steamer Erie. Leave Port Jervis at

6 o'clock am.

An Accommodation Train, for passengers and milk,

will run in connection with the steamboat towing

the Freight Barge, leaving New York and Port Jervis

at 4 o'clock pm.

FOR FREIGHT.

Leave New York at 4 o'clock, pm., per steamboat

New Haven, and Barges.

The Road will be opened to Binghamton and in-

termediate places on Monday, the 8th January, 1849,

on which day, and until further notice, the through

trains will run as follows:

FOR PASSENGERS.

Leave New York from Duane street Pier, at eight

o'clock, and Binghamton at 7 o'clock, am., daily.

H. C. SEYMOUR, Superintendent.

January 1st, 1849. ja3

NEW YORK & HARLEM RAILROAD, DAILY.

WINTER ARRANGEMENT.

On and after December 1st, 1848, the Cars will run

as follows, until further notice:—

Trains will leave the City Hall, New York, for Har-

lem and Morrisiana at 7, 9, 9 30, 11, am. 12 m., 2, 4,

4 15, 5 30, pm.

Trains will leave the City Hall, New York, for

Fordham and Williams Bridge, at 7 30 and 9 30 am.,

12 m., 2, 4 15, 5 30 pm.

Trains will leave the City Hall, New York, for

Hunt's Bridge, Underhill's and Hart's Corners, at 9 30

am., 4 15 pm.

Trains will leave the City Hall, New York, for

Tuckahoe and White Plains, at 7 30 and 9 30 am., 3 and

4 15 pm.

Trains will leave Davis' Brook, Pleasantville, Cha-

pequa, Mount Kisko, Bedford, Mechanicsville, Pur-

dy's and Croton Falls, at 7 30 and 9 30 am., 3 pm.

NOTICE—Passengers are reminded of the great

danger of standing upon the platform of the cars, and

hereby notified that the practice is contrary to the

rules of the Company, and that they do not admit any

responsibility for injury sustained by any passenger

upon the platforms, in case of accident.

Returning to New York will leave

Morrisiana and Harlem at 7 20, 8, 8 50, 10 am., 12 m.,

1 35, 3, 3 45, 5, 5 35 pm.

Fordham and Williams' Bridge at 7, 8 30, 9 50 am.,

1 15, 3 25, 5 20 pm.

Hunt's Bridge at 8 20, am., 3 18 pm.

Underhill's Road at 8 10 am., 3 08 pm.

Tuckahoe at 8 05, 9 30 am., 3 05, 5 pm.

Hart's Corners at 7 55 am., 2 52 pm.

White Plains at 7 45, 9 10 am., 2 45, 4 40 pm.

Davis' Brook at 9 am., 2 35, 4 30 pm.

Pleasantville at 8 49 am., 2 20, 4 19 pm.

Mount Kisko at 8 30 am., 2, 4 pm.

Bedford at 8 25 am., 1 55, 3 55 pm.

Mechanicsville at 8 15 am., 1 45, 3 45 pm.

Purdy's at 8 05 am., 1 35, 3 35 pm.

Croton Falls, at 8 am., 1 30, 3 30 pm.

The trains for Harlem and Morrisiana leaving City

Hall at 7, 9, 9 30, 11, 12, 2, 4, and 5 30, and from Mo-

risiana and Harlem at 7 20, 8, 10, 12, 1 35, 3, 3 45, and

5 o'clock, will land and receive passengers at 27th st.,

42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th, and

132d streets.

The 7 30 am., and 3 pm. Trains from New York to

Croton Falls, and the 8 am. Train from Croton Falls

will not stop between White Plains and New York,

except at Tuckahoe, Williams Bridge and Fordham.

A car will precede each train ten minutes to take

up passengers in the city. The last car will not stop,

except at Broome st. and 32d street.

Freight Trains leave New York at 6 am. and 1 pm.: leave Croton Falls at 7 am. and 2 30 pm., Sundays ex-

cepted.

NOTICE—On Sundays the 7 am. to Harlem and

Morrisiana, returning at 8 o'clock, and the 7 30 am.

to Croton Falls, returning 1 30 pm., will be omitted,

and the 7 am. from Williams Bridge will leave at 7 40,

and Morrisiana and Harlem at 8 o'clock am. dl

BALTIMORE AND SUSQUEHANNA RAILROAD.

Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains

run daily, except Sundays, as follows:

| | |
|-----------------------------|------------------|
| Leaves Baltimore at | 9 am. and 3½ pm. |
| Arrives at | 9 am. and 6½ pm. |
| Leaves York at | 5 am. and 3 pm. |
| Arrives at | 12½ pm. & 8 pm. |
| Leaves York for Columbia at | 1½ pm. & 8 am. |
| Leaves Columbia for York at | 8 am. & 2 pm. |

| | |
|----------------|--------|
| Fare: | |
| Fare to York | \$1 50 |
| " Wrightsville | 2 00 |
| " Columbia | 2 12½ |

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg

Or via Lancaster by railroad

Through tickets to Harrisburg or Gettysburg

In connection with the afternoon train at 3½ o'clock,

a horse car is run to Green Spring and Owing's

Mill, arriving at the Mills at

Returning, leaves Owing's Mills at

D. C. H. BORDLEY, Sup't.

31 ly Ticket Office, 63 North st.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.

| | Between Augusta and Dalton, 271 miles. | Between Charleston and Dalton, 408 miles. |
|---|--|---|
| 1st class Boxes of Hats, Bonnets, and Furniture, per cubic foot | \$0 18 | \$0 28 |
| 2d class Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs. | 1 00 | 1 50 |
| 3d class Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc. | 0 60 | 0 85 |
| 4th class Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc. | 0 40 | 0 65 |
| Cotton, per 100 lbs. | 0 45 | 0 70 |
| Molasses per hogshead | 8 50 | 13 50 |
| " " barrel | 2 50 | 4 25 |
| Salt per bushel | 0 18 | |
| Salt per Liverpool sack | 0 65 | |
| Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows | 0 75 | 1 50 |

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton. F. C. ARMS, 44*ly Sup't of Transportation.

THE WESTERN AND ATLANTIC RAILROAD.

This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur, and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT, Chief Engineer.

LITTLE MIAMI RAILROAD. WINTER ARRANGEMENT.

Change of Hours. On and after Thursday, November 9th, 1848, until further notice, Passenger Trains will

run as follows:

Leave Depot East Front street at 9½ o'clock, am., and 2½ o'clock, p.m., for Milford, Foster's Crossings, Deerfield, Morrow, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield.

Returning, leaves Springfield, at 2½ o'clock, and 9½ o'clock, am.

Passengers for New York, Boston, and intermediate points, should take the 9½ o'clock, am., Train from Cincinnati.

Passengers for Columbus, Zanesville, Wheeling and intermediate towns, should take the 9½ o'clock, am., Train.

The Ohio Stage Company are running the following lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 2½ o'clock, pm. Train from Cincinnati.

The 2½, pm., Train from Cincinnati, and 2½, am., Train from Springfield, are intended for the accommodation of Way Passengers only, and will be eight hours on the road.

Fare from Cincinnati to Xenia

Do do Springfield

Do do Sandusky City

Do do Buffalo

Do do Columbus

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENTS, Superintendent.

The Company will not be responsible for Baggage exceeding 50 dollars in value; unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value to that amount.

BALTIMORE AND OHIO RAILROAD, MAIN STEM.

The Train carrying the Great Western Mail leaves Baltimore every morning

at 7½, and Cumberland at 8 o'clock

passing Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg and Hancock, connecting daily each way with—the Washington Trains at the Relay House

seven miles from Baltimore, with the Winchester Trains at Harper's Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia, and with the lines of Post Coaches between

Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between these points \$7, and 4 cents per mile for less distances.

Fare through to Wheeling \$11, and time about 36 hours, to Pittsburgh \$10, and time about 32 hours.

Through tickets from Philadelphia to Wheeling \$13, to Pittsburgh \$12. Extra train daily, except Sundays, from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH. Daily trains at 9 A. M., and 5 P. M., and 12 at night from Baltimore, and at 6 A. M. and 5½ P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington, and the Relay House. Fare \$1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for immediate distances.

\$13 y1

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD. 1848.

Winter Arrangement. December 4th.—Fare \$4.

Leave Philadelphia 8 am., and 4 pm.

Leave Baltimore 9 am., and 8 pm.

Sunday—Philadelphia only at 4 pm.

Baltimore only at 8 pm.

Trains stop at way stations. A second class car run with morning line only.

Charleston, S. C. Through tickets Philadelphia to Charleston, \$20.

Connecting lines to Charleston leave Philadelphia, at 4 pm. daily—leave Baltimore at 11½ pm. daily.

Pittsburg and Wheeling. Through ticket, Philadelphia to Pittsburg, \$12.

Wheeling, 13.

All through tickets only sold at office Philad.

Wilmington Accommodation. Leaves Philadelphia at 1½ and 4 pm.

Leaves Wilmington at 8 am., and 4 pm.

N.B.—Extra baggage charged for.

I. R. TRIMBLE, Gen. Sup't.

PHILADELPHIA & READING RAILROAD.

Passenger Train Arrangement for 1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except

Sundays, at 9 o'clock am.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 am.

Fares. Miles. No. 1. No. 2.

Between Phila. and Pottsville, 92 \$3.50 and \$3.00

" " Reading 58 2.25 and 1.90

" " Pottsville 34 1.40 and 1.20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets.

8tf.

CENTRAL RAILROAD. FROM SAVANNAH TO MACON. Distance 190 miles.

This Road is open for the transportation of Passengers & Freight.

Rate of Passage \$9 00. Freight

On weight goods generally, 50 cts. per hundred

On measurement goods 13 cts. per cubic ft.

On brls. wet (except molasses and oil) 1 50 per barrel.

On brls. dry (except lime) 80 cts. per barrel.

On iron in pigs or bars, castings for mills, and unboxed machinery 40 cts. per hundred

On hhds. and pipes of liquor, not over 120 gallons \$5 00 per hhd.

On molasses and oil \$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE,

Gen'l Sup't Transportation.

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the

arrival of the boats from Wilmington, N. C., in connection with trains on

the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily

Fare through from Charleston to Huntsville, Decatur and Tuscumbia

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent.

Troy Iron and Nail Factory, Troy, N. Y.

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.

The subscriber is engaged in manufacturing spring steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, Agent, Albany Iron and Nail Works.

ALBANY IRON AND NAIL WORKS.

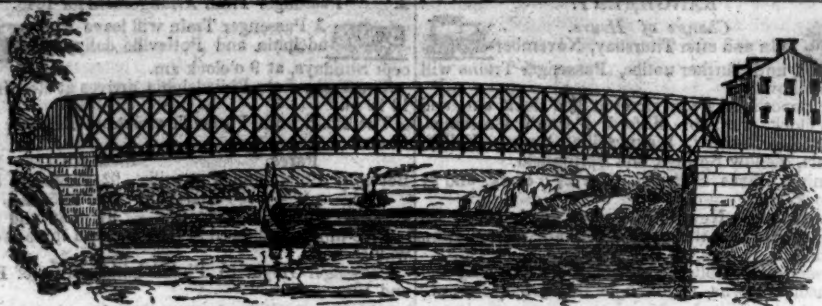
PATENT HAMMERED RAILROAD SHIP & BOAT SPIKES.

The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hunt & Merritt, N. York; J. H. Whitney, do.; E. J. Etting, Philadelphia; William E. Coffin & Co., Boston.



RIDER'S PATENT IRON BRIDGE.

THE RIDER IRON BRIDGE having been fully tested on the Harlem Railroad, by constant use for about eighteen months, and found to answer the full expectations of its most sanguine friends, is now offered to the public with the utmost confidence as to its great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time is so arranged as to secure the combined principles of the Arch, Suspension and Triangle, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

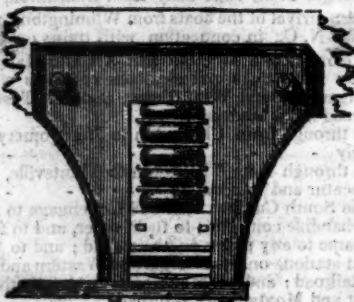
THE IRON RIDER BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, made under the above patent, at short notice, and at prices far more economical than the best wood structure, and on certain conditions, the first cost may be made the same as wood.

Models, and pamphlets giving full descriptions of the RIDER BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 74 BROADWAY, up stairs, or of W. RIDER & BROTHERS, 53 Liberty Street, where terms of contract will be made known, and where orders are solicited.

November 25, 1848.

M. M. WHITE,
Agent for the Company.

Fuller's Patent India-Rubber Springs.



THERE can now be no ground of opposition whatever to these Springs. The Commissioner of Patents has not only rejected the application for a Patent for a similar Spring, but a Patent has just been granted for an entirely new species of India Rubber, the quality of which can be surpassed by no other kind, as the experiments which have lately been publicly made, have fully proved. No extremes of heat or cold can effect it, nor will any amount of pressure permanently alter its shape. This Patent refutes the statement of the "New England Car Company" as to their sole right to use India Rubber.

The Spring (composed by alternate layers of India Rubber Discs and Metal Plates) is superior to any other form of Spring, for several reasons: It is the lightest, the most simple and most durable—there being less friction in this than in other kind; it can be regulated to any extent desired. A less quantity of Rubber is required in this form to make a good spring than in any other because each disc or ring of India Rubber is firmly supported by metal plates, and forms in itself a distinct spring—nor is any spiral spring required. The Patentee is consequently able to supply efficient springs at a less cost than any other parties can do. Purchasers are guaranteed in the use of these springs.

This spring has been used nearly four years with complete success. It is applicable equally to Passenger and Freight Cars, to Locomotives and Tenders. Bumpers and Draw Springs are always kept on hand, which merely require screwing to a car. It has lately been applied also to several kinds of Machines.

Action will be brought against all persons infringing upon these patents.

The subscriber will show Models and Drawings of the various modes of application to Cars, Machines, Omnibuses, &c.

G. M. KNEVITT, Agent.

Principal office, No. 78 Broad st., New York.

Branch office, Messrs. James Lee & Co.'s, No. 18 India Wharf, Boston.

Mr. Hale, the President of the Boston and Worcester

ter Railroad, wrote an article concerning Fuller's Springs. The "New England Car Company" take the liberty of publishing that article, omitting, however, a very important part; it is therefore given in full now, and the portion omitted by the New England Car Company is printed in italics, that the public may judge the manner in which this "company" pervert Mr. Hale's meaning.

[From the Boston Advertiser of the 7th June].

INDIA RUBBER SPRINGS FOR RAILROAD CARS.
"Of the numerous uses to which the wonderful elasticity and durability of India rubber, renders this material applicable, we are hardly aware of one, in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used not only for the springs on which the car rests, but for the springs attached to the draw bar, at each end of the car, to prevent any jar on the sudden commencement, or interruption of the motion of the car. For both these purposes it seems to be admirably adapted, and we do not learn that during that period in which it has been used, any defect has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring we have seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is also simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months in which we have seen the springs in operation, there is no apparent wear or diminution of its efficiency. Each spring is composed of several circular layers of rings of India rubber, a thin metallic plate of the same size being interposed between each of the layers. From the simplicity of its form, it cannot be expensive, and it admits of being made more or less elastic almost at pleasure. The invention, we understand, was first patented in England, where it has been introduced into general use on several of the principal railroads, and we have no doubt it will come into very extensive use in this country. The patent for this invention, we understand, has been granted to Mr. W. C. Fuller, in England and France, and also in this country. Mr. Knevitt, of New York, is the agent for the patentee in the United States, and he has established a branch office for the supply of the article in this city, as may be learned from an advertisement in another column of this paper."

MANUFACTURE OF PATENT WIRE ROPE
and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tilters, etc. by
JOHN A. ROEBLING, Civil Engineer,
Pittsburgh, Pa.

These Ropes are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

RAILROAD SCALES, ETC.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, Railroad and Depot Scales, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

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April 22, 1848. ly*17

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